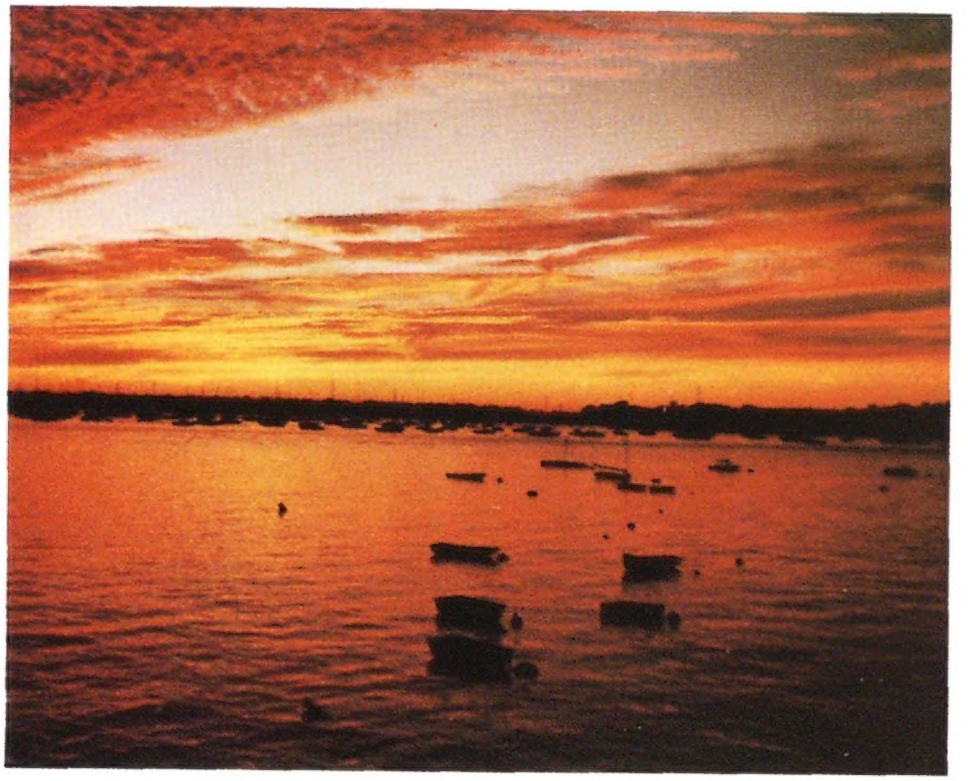
# Smithsonian

*August 1986*

The allure of jade: here and back cover, a classic reclining horse

# WHICH 35MM CAMERA TOOK THIS PHOTOGRAPH?



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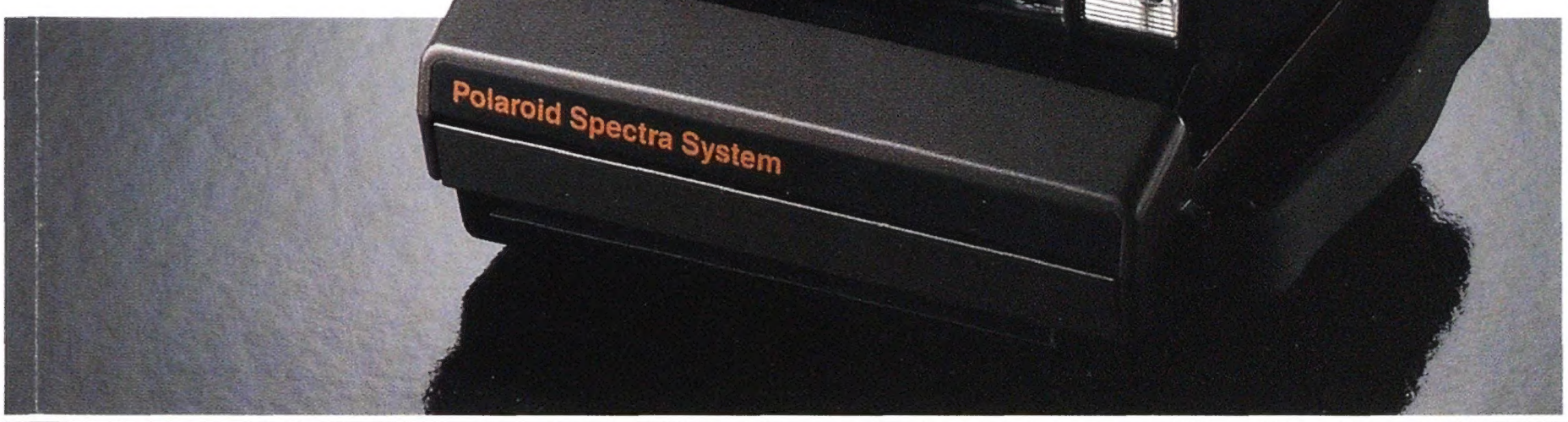


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*August 1986*

# Smithsonian

Volume 17, Number 5

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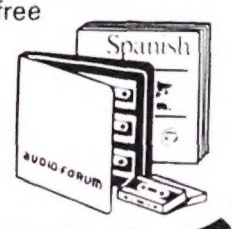


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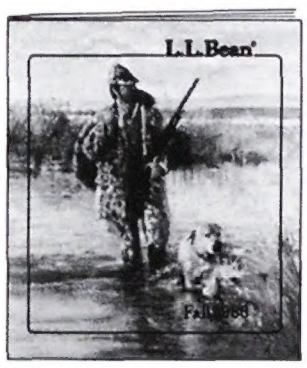


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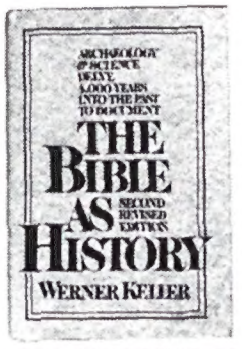


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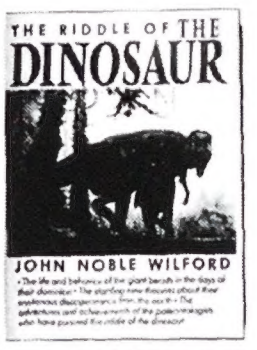


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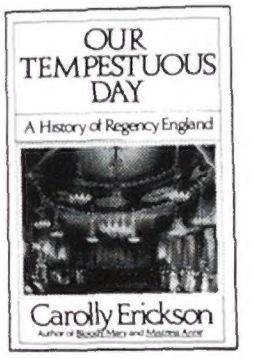


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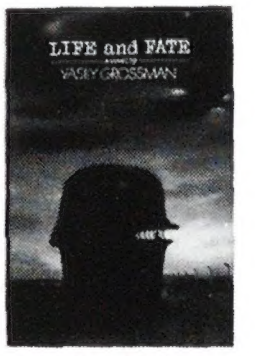


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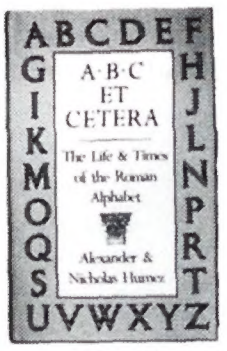


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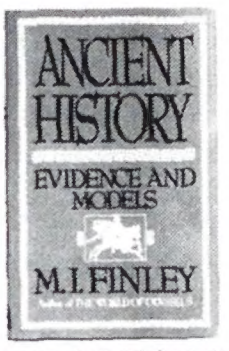


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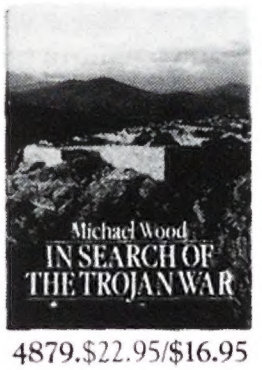


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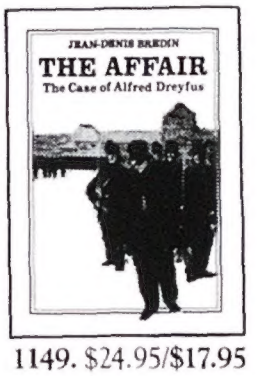


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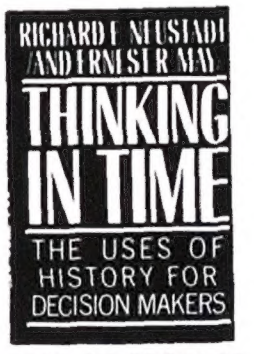


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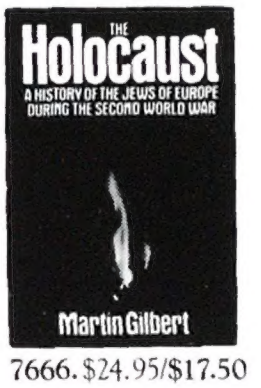


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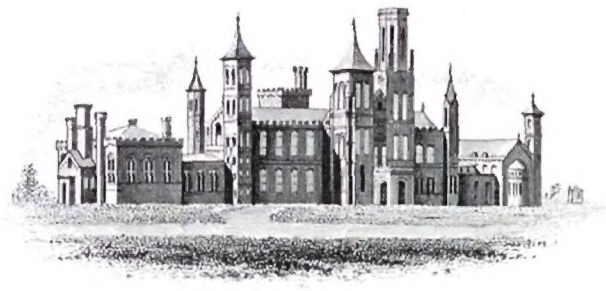


# *Smithsonian horizons*

*Although the Great Powers are uneasy with each other, well-planned cooperative scientific ventures can still be valuable*

This is a time when a sense of drift, tinctured by mutual suspicions, pervades Great Power relations. The optimism engendered by the summit conference last fall has largely dissipated. Against a background of an accelerating tempo of terrorist acts and reprisals, there is confusion over apparent discrepancies between publicly announced negotiating positions and leaks or speculations as to underlying intentions on both sides. Perhaps in this discouraging climate, it will provide a lift to the spirits to recount one small but promising tale of highly successful scientific cooperation that took place during the recent Soviet Vega missions to Halley's Comet (SMITHSONIAN, July 1986).

Physicist John A. Simpson of the Laboratory for Astrophysics and Space Research at the University of Chicago has long been involved in the study of cosmic rays. He and his colleagues have played a leading part in designing and building the experimental equipment that has been carried on more than 28 of NASA's planetary exploration missions. In 1983 they discovered a new means for detecting speeding atomic nuclei of interstellar origin, and immediately recognized that it would serve as well to measure the clouds of primordial dust associated with comets. For budgetary reasons, however, no U.S. mission to Halley's Comet was planned. Nor could room be found for an additional experiment aboard Giotto, the European Space Agency vehicle. While Simpson's presentation of the idea was greeted with enthusiasm at a scientific meeting in Holland, he returned to Chicago with dashed hopes of being able to implement it.

Instrument payloads on space missions have become a matter of genuine international collaboration. Japanese probes into Halley's region were planned. Two Soviet Vega missions to the comet were far advanced in preparation, including provision, among other instruments, for French, West German and Austrian contributions. Unknown to Simpson, a scientist involved in those missions had attended the meeting in Holland. Several weeks later a completely unexpected invitation was extended for him to come to Moscow and discuss possible arrangements for installing one additional instrument in each spacecraft.

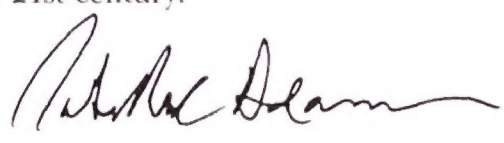
As is often the case, procedural problems were at least as difficult as the substantive ones. Laws carefully control the transfer of technology with potential military applications to the Soviet Union, and with no official bilateral agreement in place, Simpson and his staff naturally turned for approval of the venture to NASA, the Department of State and the President's Science Adviser. Export licensing requirements were met by redesigning the idea to incorporate only older electronics devices that were commercially available anywhere. Delays ensued as a result of the Grenada invasion and the death of General Secretary Andropov, and the venue of the meeting had to be shifted to the Hungarian Central Research Institute. Still other serious obstacles involved a direct agreement between the U.S. and Soviet groups of researchers. It would have been illegal for Simpson to sign an agreement with the Soviets, and the latter were unwilling openly to concede in a protocol that the equipment was of U.S. design and origin. The problem was fortunately overcome by the readiness of West Germany's Max Planck Institute to serve as a middleman in the arrangement.

Finally, in February 1984, the two sides met for the first time in Budapest. Heading the Soviet team was one of their most renowned authorities, Academician R. Z. Sagdeev of their Academy's Space Research Institute. With the launch of the spacecraft only ten months away, the Chicago team had no knowledge of any of the complex Soviet engineering interfaces—electronic, mechanical, thermal, computer, data transmission and the like. An around-the-clock engineering effort began in Chicago in March, and only two months later, to great Soviet astonishment but also to their own, Simpson and his staff were in Moscow to begin final installation. Launch occurred on schedule, and on March 6th and 9th of this year the two spacecraft hurtled through the comet's coma at a relative velocity of 176,760 miles per hour.

The new instruments, of which Simpson is justifiably proud, had to be versatile and rugged. They were capable of measuring dust particles down to a ten-thousandth of a billionth of a gram, and of counting them at a rate of 50,000 per second, but they had to function in a hazardous environment of hypervelocity comet dust of unknown composition and intensity.

Both of Simpson's instruments worked perfectly, from their first encounter with minute dust particles at a distance of some 400,000 miles from the comet to their detection of intense, highly localized jets found emanating from the comet's nine-mile-long nucleus. The impact of dust particles reduced the current from the Vegas' solar cells by almost 50 percent, but they remain serviceable and so may be directed onward to another mission in interplanetary space.

Simpson is optimistic that there are other potential projects offering comparably favorable conditions for collaboration. The importance of the scientific goals must be recognized as a benefit to both sides, and the hands-on participation of both sides is a vital principle. Ways can be found to obviate the need for a net technology transfer in either direction, he believes, and prior agreement is needed to assure full and prompt publication of the resultant data. "With these caveats," he concluded his testimony before a Congressional committee last summer, "cooperation—as well as healthy competition—with the Soviets can only add to the stature of our nation. As a leading spacefaring nation we cannot do less if we intend to be a leader in space in the 21st century."



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Miniaturization is one key to increasing power, capability and speed in an integrated circuit.

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This micro-laboratory makes it possible to segregate, manipulate and "tune-in" on individual electrons. (Listening to electrons one at a time is like listening to the clapping of one person in the crowd at the Olympics.) By studying electron flow at this minuscule order of magnitude, AT&T has produced some fundamental revelations about the sources of circuit noise.

### The Rocks In The Rapids

As electrons move through the narrow circuit, they behave both like waves and like particles. The particles can be troublemakers. Some produce obstacles in the form of charged atoms—atomic "rocks" that create disruptions in the flow of current, much the way rocks create the "rapids" in a stream.

Noise—in the form of individual "clicks"—comes from sudden changes in

Listening to electrons one at a time.

current flow as single electrons create and destroy atomic "rocks." Now, using our narrow-channel transistor to study these disruptions in current flow, we are able to identify the individual clicks that comprise data-obscuring noise in ultra-small circuits.

### Quiet! Electrons At Work

Identifying the source of electron noise is a big step toward removing it. But, AT&T is already working on the next step—experimentally altering the nature of atomic obstacles to reduce their effects.

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A consistent world leader in microelectronics, AT&T will continue to probe the physics of the very small, building on the advanced research made possible by a laboratory on a chip.

☐AT&T publishes a magazine called PROTO, a report to managers on how AT&T technologies are being used in advanced communications products and services.

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# *Letters to the Editor*

## *Reviving Hue*

Dear Sir: Your June article brought to mind my service as a U.S. Army helicopter pilot, stationed at Camp Evans just north of Hue, in 1968. The beautiful gardens and pools of the monuments were a welcome diversion and brief moment of serenity, viewed from my aerial vantage point—a striking contrast to all the military engagements in and around this beautiful city.
*Stephen A. Brownell*
Laguna Beach

Dear Sir: While serving with the U.S. Army's 2nd Surgical Hospital in Phu Bai, a few miles south of Hue, in the fall of 1968, some energetic Special Services-type engineered a day trip and tour of the old Imperial City for members of the hospital staff. As I recall it now, the invitation went something like this: "Tour of historic Hue. Box lunches are available in the mess hall. Transportation by duce and a half [the Army's standard 2½-ton truck] at 0800 hours. Bring steel pot, flak jacket and weapon."

Somehow, with that last admonition, the outing lost most of its appeal and I didn't go. In retrospect 20 years later, I wish that I had.
*Thomas H. Otwell*
Silver Spring, Maryland

Dear Sir: In 1970 I was a Military Policeman in Phu Bai and Hue and occasionally would find myself at the Citadel. Whenever I could I took time off to walk the grounds and observe the quiet dignity of that shattered place.

It never took long to feel the certainty that the Citadel represented a less anguished time. Even with its war scars still very much in evidence, it seemed a proud and enduring symbol of an old and valid society and culture.

I would like to imagine that it could be restored. I worked with many Vietnamese who firmly believed that most Americans didn't think there was anything in Vietnam worth saving. As did your article, the Vietnamese I knew honored the past—of which they were justifiably proud.
*S.R. Larson*
Largo, Florida

## *Flight simulators*

Dear Sir: After reading Mr. Chiles' article many readers might assume that accessibility to flight-simulator training is limited to the military, NASA astronauts and commercial airline pilots.

Not so! At least two organizations, Flight-Safety International at LaGuardia airport in New York and SimuFlite at the Dallas-Forth Worth airport offer it to private and business pilots of both turboprop and jet aircraft. In fact, airframe manufacturers offer simulator training gratis with the purchase of a new aircraft.

The pilot training that might save passenger lives on commercial airliners is equally vital to those of us who find ourselves aboard either private or company-owned aircraft.
*Suzanne G. Scott*
Colleyville, Texas

Dear Sir: Twenty hours and 20 crashes in a Link trainer taught me about aviation.

When World War II started I didn't know an airplane from a butterfly. Unable to join one of the military services, I became a trainee with the Civil Aeronautics Authority, predecessor of the FAA. The only qualification was a college degree. I did well enough on book learning, but what a pilot did with it all was a mystery.

Then came a directive that all airport control personnel were to have Link trainer time. The sweat and the crashes made all the difference. Then I knew what I was doing. Indeed, the old Link "blue box" was a blessing.
*Georges LeRoux*
Grants Pass, Oregon

## *Chez Michelin*

Dear Sir: When I worked for Rand McNally, making dummy road maps in 1929, my reference material consisted of maps already in general use—and the Michelins were the best of all.
*George Green*
Winston-Salem

## *Statue of Liberty*

Dear Sir: Your caption on pages 74-75 states that the Statue of Liberty's original torch went to the "Rose Bowl Parade."

There is no such thing. Every year on January 1 the City of Pasadena presents its "Tournament of Roses Parade." It and the football game are entirely separate events; they just happen to take place on the same day. The parade, in fact, dates from 1890; the first Rose Bowl game was played in 1902.
*Jay Michalsky*
Altadena, California

Dear Sir: If your writer Spencer Davidson can credit—and certainly justifiably—General Electric for contributing a new lighting system to the refurbishing of Lady Liberty, it seems only fair to credit DuPont for furnishing the fiber and Bigelow-Sanford for donating the weaving of 3,000 square yards of carpet to cover the Statue's interior stairways.
*Reed Alvord*
Hamilton, New York

## *Père David's deer*

Dear Sir: Père David achieved his greatest fame as a botanist and plant hunter. Many of his discoveries are popular plants in our gardens, and some of the finest bear his name, for example: the dove tree (*Davidia involucrata*) and a handsome striped-bark maple, *Acer Davidi.*

He explored large areas of China and adjacent Tibet and collected hundreds of species of plants.
*Nickolas Nickou*
Branford, Connecticut

## *Nikola Tesla*

Dear Sir: If history has been unkind to Tesla, as Mr. Hall points out, so has Madison, Wisconsin. Originally the street next to Marconi was named for Tesla. Later on, someone botched a new street sign and the result was "Telsa." When the error was pointed out to the city council, it voted to keep the misspelling because residents said a change would inconvenience them. Besides, who cared about Tesla?

As a professor of history, I'm glad you do, as does the Smithsonian Institution, which devoted an exhibit to him. So does the U.S. Post Office, which recently issued a stamp in Tesla's honor.
*Michael B. Petrovich*
University of Wisconsin
Madison

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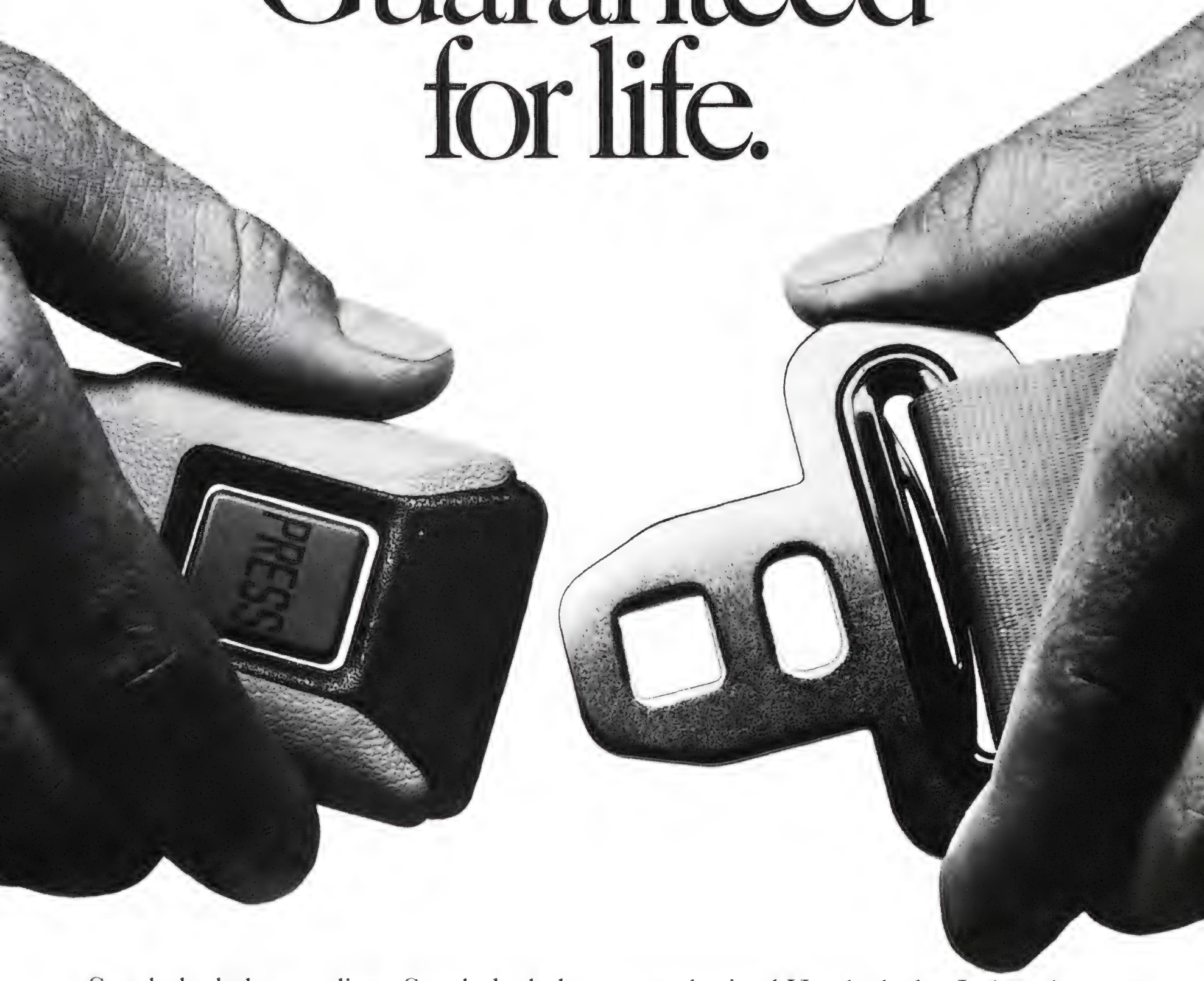

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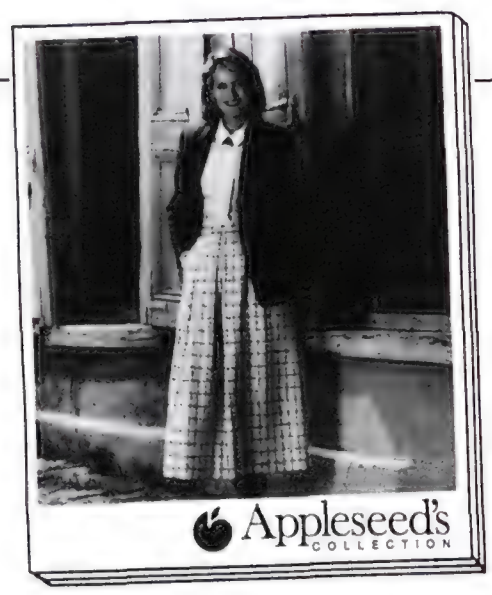


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# *Around the Mall and beyond*

In 1969, shortly after I joined the handful of people who contemplated starting a new national magazine to be called SMITHSONIAN, a number of eminent scientists and philosophers gathered at the Institution for a symposium entitled "Man and Beast: Comparative Social Behavior." I went to some of the sessions and found the attending scholars kicking around a variety of stimulating questions about the place of Man (with a capital M) in the animal world: Is Man unique? Is Man's evolution continuing? Can we study Man the same way that we study animals? Can Man slow the extinction process in Beast? In himself?

Last May, a continuation of the same symposium took place at the Smithsonian. "Man and Beast Revisited," the title of the sequel, was held at the National Zoo's Conservation and Research Center at Front Royal and in the auditorium of its Education/Administration Building in Washington—neither of which was part of the Smithsonian 17 years ago. I sat in long enough to realize that during the past 17 years, science has leapt ahead, whereas I have stood relatively still, at least mentally, agape at the wonders that pass me by.

Out of the papers that were discussed, the ones dealing with communication between animals, or between humans, or, in fact, between animals and humans, intrigued me most. For one thing, I could understand bits of them. For another, I am, I suppose, a communicator myself. Not a Great Communicator, I hasten to add, but a Very Small Communicator.

I'm not as small, however, as Alex. According to Donald R. Griffin, professor of biology at the Rockefeller University, Alex is an African gray parrot who refutes the notion that all his species can do is parrot—that is, imitate. Alex, says Dr. Griffin, has learned "to use his imitations of English words to request, refuse, identify, and

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Our representatives are in contact with porcelain houses all around the world. They select only the very best thimbles. Many of the monthly selections are created exclusively for the Club's members.

The thimbles in your collection will bear the names and identifying marks of the great houses that created them. They will reflect the different artistic visions of the various nations and porcelain makers. Thus, the individual thimbles will have infinite variety…yet together they will form a harmonious collection.

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categorize objects that seem to be important to him."

Alex has been schooled to do this by animal behaviorist Irene M. Pepperberg, but he is able to answer questions even from strangers with 80-percent accuracy. Dr. Griffin feels that it is unlikely that inadvertent cues could account for the high percentage of correct responses, and suggests that psychologists might do well to have a careful look at Alex.

In another paper, Glenn L. Radde, a Minnesota geographer and anthropologist, discussed relationships between famous people and their dogs, indicating that dog behavior served as a communication link with these humans. "For example, Hegel, Beethoven, Schubert, Schopenhauer, and Wundt all had poodles. It is alleged that Beethoven and Schubert tried out several music pieces on their dogs before anyone else heard them. It becomes an obvious and interesting question in this case to ask just 'whose' music do we now listen to? Is it the music they started with or was it changed if their dogs howled or walked out of the room?"

Accordingly, a special reception for symposium participants and sponsors was held in the Elephant House at the Zoo. A woodwind trio and string quartet, carefully placed so that the elephants could watch (elephants get nervous if they can't see what's going on) provided the entertainment. The Asian elephants, reports a keeper, seem to prefer Vivaldi.

Getting back to Dr. Radde, Sigmund Freud's chow, Jo-Fi, "was always with him, and would signal when his therapeutic sessions were to begin and end." He says Jo-Fi kept a firm paw on Freud's social life. Guests whom she liked and allowed to pet her were welcome; those she avoided "were politely and quickly removed."

Physiologist and Veterinary Dean Leo K. Bustad of Washington State University noted the reciprocal relationship between people and certain other animals, and pointed out that talking to animals can be as soothing to them as it can be therapeutic to humans. Tests, he explained, have shown that "blood pressure was reduced when people touched and/or talked to animals." Also, added Dean Bustad, "Gentle, tactile stimulation and talking to animals can significantly modify an animal's response. . . ." Not surprisingly, one of the corporate sponsors of the symposium was a pet-food company—Kal Kan.

One panelist at the symposium was John F. Eisenberg, who wrote about Ceylonese elephants in the cover story of this magazine's first issue in April 1970. He left the

# Enhance Your Home with the Beauty and Majesty of the Barn Owl...

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Zoo, where he was resident scientist, to join the faculty of the University of Florida. Eisenberg comments that the usual scientific feeling that animals communicate only by signals is changing. "Recent experiments suggest that vocalizations within primates may actually represent in a symbolic sense something to the receiver." Eisenberg finds himself swinging over to the notion that "semantic" communication, especially in certain sea mammals, should be studied more fully.

Quickly, too. "Man and Beast Revisited" reminded us all of Man's lonely future in a world where habitat after habitat, Beast after Beast slips, inexorably, into extinction.

Last winter, a sort of one-man symposium on the same subject showed up at the Museum of Natural History, and I made friends with him. He's Gendron Jensen, a remarkable artist from Minnesota, who was awarded a grant from the Hereward Lester Cooke Foundation (which supports visual artists in mid-career) to venture away from his beloved woodlands and come to Natural History to draw bones—both fossil and contemporary—from its collections.

But Jensen doesn't draw them the way you'd expect at that museum. He is almost as intensely accurate as a scientific artist, but because old bones speak to him of living animals in a fresh and beautiful time long past, they deeply move this sensitive man. He expresses his feelings by idealizing the found form, arranging these "relics" of nature into compositions—"configurations"—that reflect the veiled wonders of the natural world.

Jensen was at work in the "skeletal range" of the Division of Amphibians and Reptiles at Natural History with skulls of turtles spread out before him so he could draw them with his 2H graphite pencil. "This is a contemporary juvenile loggerhead from Lake Maracaibo, Venezuela," he told me. "When I discovered it, I had been through almost every drawer. It seemed to touch me in a way the others didn't. I look at thousands of relics, and certain ones have something about them."

He worked at his drawing steadily, and I saw it taking shape—a turtle skull, but certainly with something special about it. No wonder he is touted by critics and wins kudos and bears the responsibility of an almost saintly aura. "It is not just pencil meeting the paper," noted one critic, "but his whole philosophy of the *joie de vivre*, and also its sadness."

Jensen often arranges bones in a totemic way—one atop the other—or with such horizontal symmetry that some of his drawings take the shape of Rorschach tests, only

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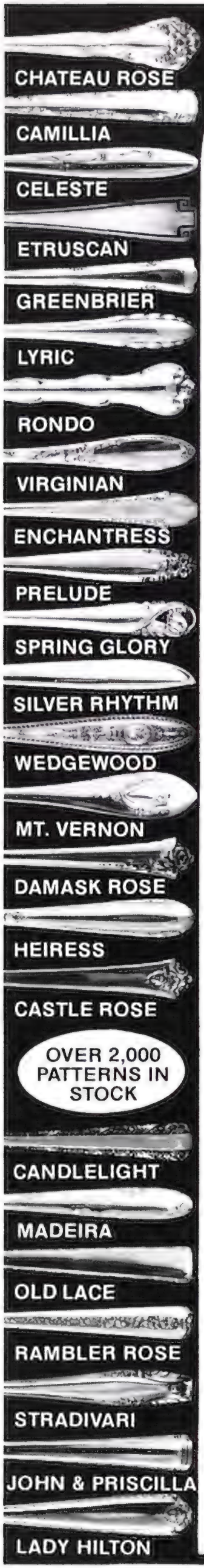


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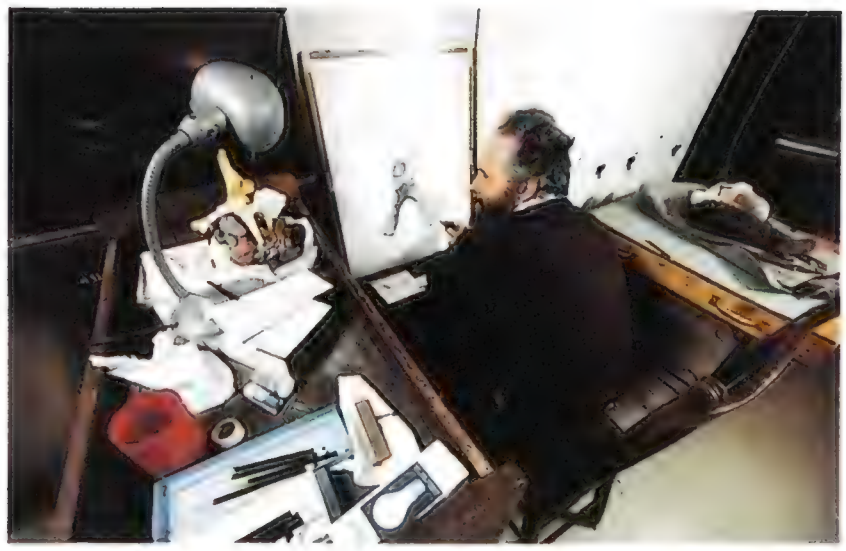

In improvised studio at Natural History, artist Gendron Jensen configures contemporary and fossil turtle bones.

with purpose and beauty. When he configures, as he often does, new bones with fossils of the same species, he puts the fossil below. His pairings sometimes cause concern to scientific viewers: "I found a turtle from the Seychelles that fitted perfectly with one from Wyoming. But one of the scientists here said, 'Can't you at least stay in the same hemisphere?' So I found a good pairing from the Galápagos Islands. I put a time warp of 50 million years on the same sheet of paper."

He works very fast, and watching him, I found myself traveling along with him, feeling a sort of message—a blurred version of what he feels with such intensity: here was an animal, fitting properly into the world of its time, forming a tiny but impeccably perfect item in the intricate fabric of life.

He finds what he calls "the sanctuary within a skull." He had drawn a turtle skull in his ledger—a real ledger that says "Cash" at the top of the page and has page after page of his drawings right across the debit and credit lines. "This is the skull of a tortoise, *Geochelone vicina*," he said, "and I wrote a feeling I had about it: 'As tiny as the brain may well be from scientific prospection, there appears to me, even in this skull, some level of intelligence which we humans lost, or have yet to find.' That's how I feel."

Gendron Jensen is in his mid-40s, a well-knit man who moves with the quick sureness of one who lives outdoors much of the time. So he does. He lives on a former mink farm in Minnesota and has only left it for substantial periods to work on a cattle ranch and to spend some time in a monastery. Neither exodus took, though it was a priest who gave him the confidence to stick with the tool of trade he loved best—the pencil. Mainly, he works at his home, in a studio littered with bones—moose bones, wolf bones, bones from road kills. He finds many in the woods that he constantly ranges. Some are sent by friends. He doesn't wash them. The dirt, the patina, is, he feels, essential to them.

While at the Smithsonian he got deeply involved with his turtles, and then was smitten with the possibilities of marine mammals. He wrote me that "The lovely blue whale skulls . . . left me changed for all time!"

So I shall, I hope, see my new friend again, this talented and gentle and extraordinary man, the only bone artist I know. He explains that tenuous relationship between Man and Beast in his own way. I can't say I understand it much better than I do the biologists' way. But it moved me.

*Edwards Park*

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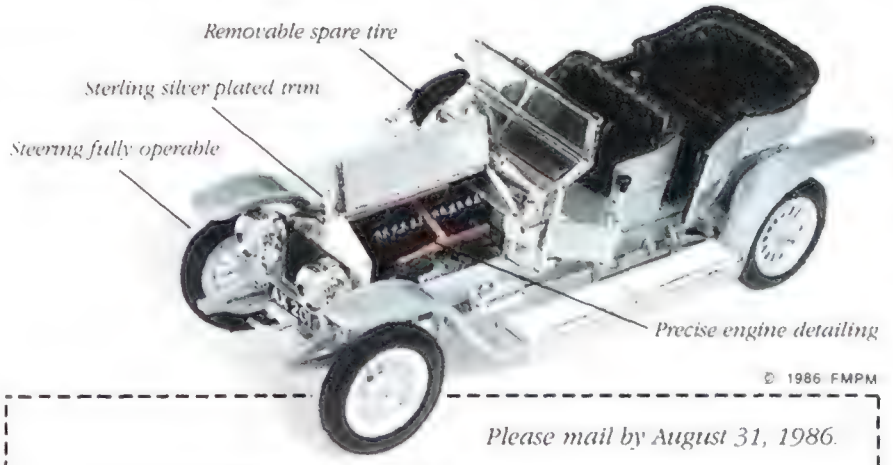


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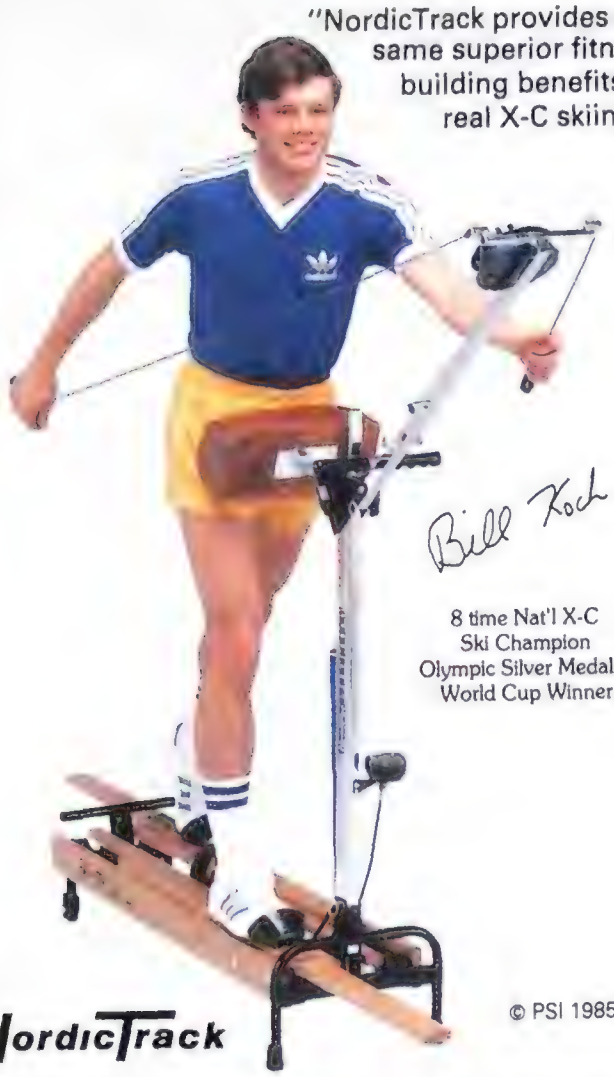


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# *Phenomena, comment and notes*

*The forays may be farther from home, but deep inside of the 50-year-old puffing up the trail is the original boy*

When I was six and seven and eight, I loved fresh snow. I would rush out into the fields and thickets behind my house in Cranford, New Jersey, to look for animal tracks. Happily I would follow a set of mouse tracks, looking for the signs of a fox or even an owl suddenly ending those delicate indentations in the snow. A pleasant knot would take hold in the pit of my stomach as I followed tracks into places unknown to me.

The snow became a window to an unseen world. I knew a little of the birds in this long-abandoned farmland. I had netted the local butterflies with cheesecloth, coat hanger and broomstick. Fearlessly I had captured box turtles. But outside of the occasional squirrel, mammals were invisible. It was the snow that showed me they were there. The knot in my stomach came not only from being so far from walls and warmth but from the excitement of knowing the woods were alive. Tracks were everywhere, and it would have taken a Cray computer to figure out everything that had happened since the snow fell.

Now, undoubtedly the result of some hyperspace, time-warp trick of the quantum genies, the calendar says I am 50. Ridiculous on the face of it, of course. A laughable error on the part of the cosmic calculator. It is true that certain unimportant externalities show some sign of 50 loops around the sun. Inside, however, the boy lives on. Forays may be farther from home, but that tiny knot of pleasant anticipation is a thread through the years.

Purely by coincidence, the weeks leading up to that birthday were a succession

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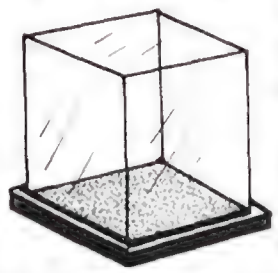

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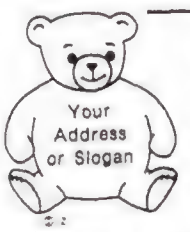


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of windows on the world, a blur of new places and new understandings. The sequence begins in a canoe following biological technician Kelly Davis around the western end of Lake Mattamuskeet in North Carolina, checking osprey nests on one of the brightest, bluest Sunday mornings that ever was. We push through the bottlebrush stems of water milfoil from one stunted bald cypress to another, counting eggs of mottled dark brown and dirty ivory while the parents sweep back and forth around us, crying in alarm. Later Kelly will be back to band the young; still later she will learn their fate when thoughtful hunters return the bands from Venezuela and Colombia.

Then into the woods, high in the Blue Ridge Mountains of Virginia. Wintergreen, a resort that boasts a full-time naturalist, is having a wildflower symposium. Everybody has their blind spots. I smiled indulgently when my friend the physicist and I walked an Atlantic beach (*Phenomena*, July 1985). He did not see the birds, only the energy manifested in wind and waves. Whimbrels were irrelevant. My blind spot is reciprocal to his. I'm a birdwalker, and my eyes move all the time, looking for motion. I not only don't stop to smell the flowers, I don't even see them.

A friend made me acutely aware of my deficiency in early spring. We are along the Potomac. I am watching for birds, preferably herons or bigger. She stops me: "Did you see the spring beauties?" Behind me, hugging the ground, are little white "violets" with red ribs: beautiful, fragile, ephemeral creations, as spectacular in their way as any bird. A little later she points out that I am trampling dogtooth violets, gorgeous yellow lily-like flowers, set in leaves of dark green with purple splotches. She shows me Virginia bluebells, their flowers composed of two dozen lavender, ribbed ovoids like little purple, deflated footballs. Clearly I am missing half the fun.

So I had signed up for a weekend of more crystal-blue mornings, following streams that tumble down the mountain. My notes are a mess: "Tassel rue—foliage looks like geranium." "Wild yam—parallel venation." "Horse balm—cup the leaves for strong lemon smell." Botanists turn out to be almost as likable as birders. They have their jokes (How do you tell a beech from a birch? The beech is the one with initials carved in it) and their frustrations (one flower is identified as a DYC—a "damned yellow compositae").

On one walk, Peter Mazzeo of the National Arboretum stops where a circle of American chestnut shoots mark the loca-


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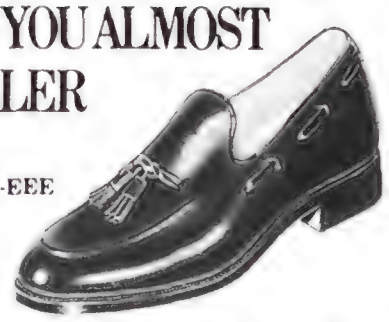

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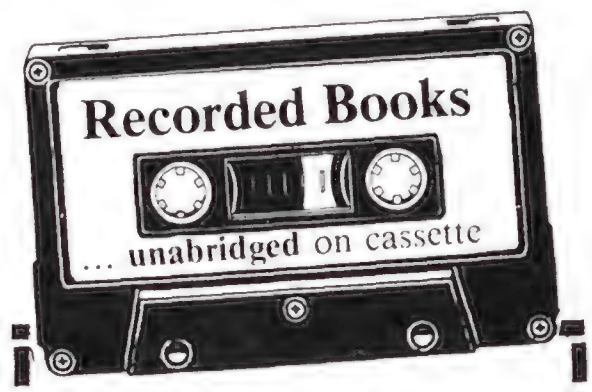


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tion of a rotting stump. In the past year or so, he announces, foresters have found that a variant strain of fungus is superseding the original one that began wiping out the species 80 years ago. The new fungus does not harm the trees, so it now seems possible that the American chestnut, which once accounted for three out of every four trees in the Appalachians, will rise again. A breaking news story of the best kind.

Then it was back on the water at the Smithsonian's Environmental Research Center (SERC) on Chesapeake Bay. On foot and in canoes, we explore the Rhode River estuary—and a whole different approach to the natural world. This ecosystem is wired. An automated tower in the forest will sample climatological variables at five heights, from ground level to above the forest canopy. Rain runoff is collected in small pits. Underground dams intercept moving groundwater and force it to the surface for analysis. Everything that moves up and down Muddy Creek to and from the Rhode is caught in a fish weir that is run 24 hours a day, three days each week. The near shore is seined at 14 stations, while otter trawls operate farther out in the stream. A coring device brings up samples of the bottom; in the wet lab, tiny invertebrates are teased apart and tallied under microscopes. Raised railroad tracks crisscross the marshes, so biologists on small handcars can move about without doing physical damage.

Dave Correll, a chemist who directs the operation, tells a group of us that at times the acidity of the creek is ten times what it was just ten years ago, reaching a level that is toxic to small animals. But then there is good news, or rather a new understanding that is good news. For years I have been depressed about reports that certain birds, including flycatchers and wood thrushes, have been disappearing from the large, "ecosystem remnant" parks in Washington, D.C. Published reports have attributed the decline to the birds' loss of winter habitat in Central and South America. But Jim Lynch, a SERC ecologist who is studying the effects of forest fragmentation both here and in the Yucatán peninsula, has a simpler and less frightening explanation. To reach the parks in Washington, the birds have to fly over more and more miles of office parks and residential tracts as the suburbs spread inexorably outward. Some just will not do it. The population is not dropping precipitously; rather, the birds are just giving up on central parks in large cities.

A small thing, and perhaps obvious to


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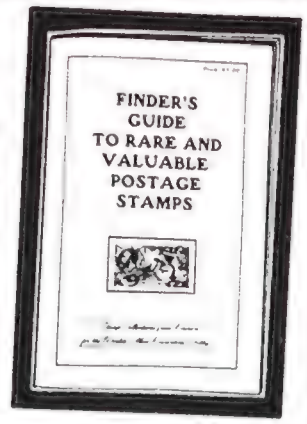


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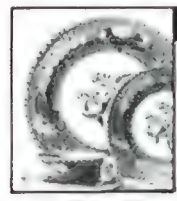

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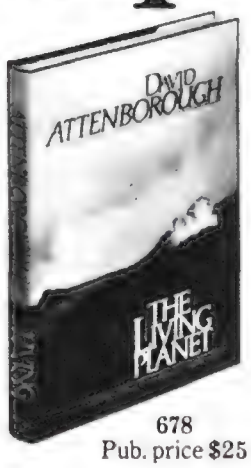


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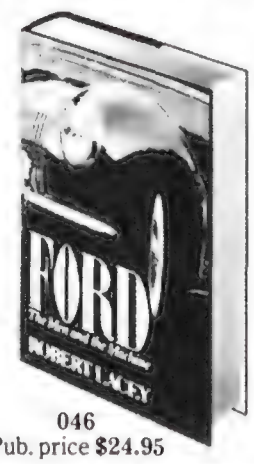


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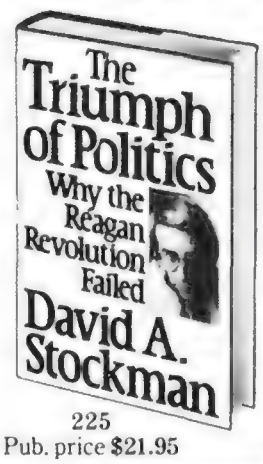


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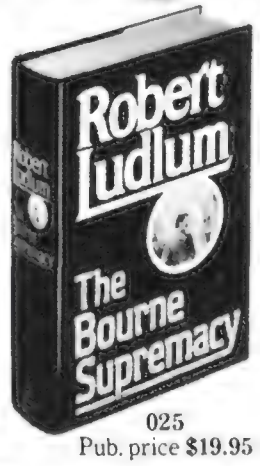


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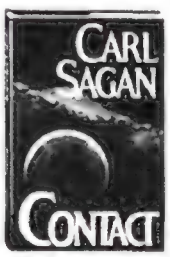


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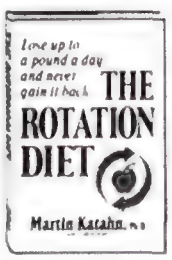


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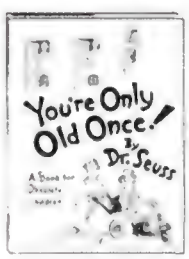


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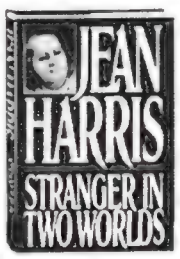


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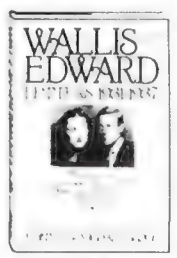


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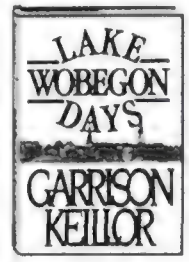


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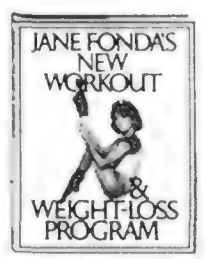


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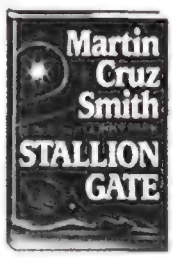


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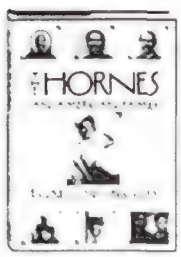


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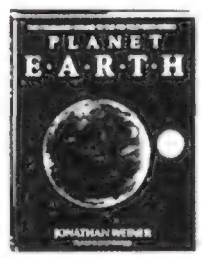


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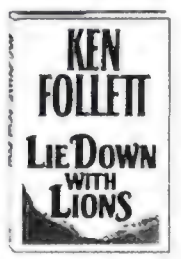


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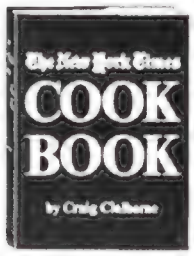


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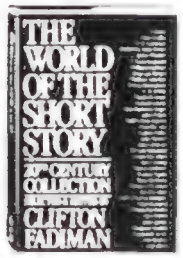


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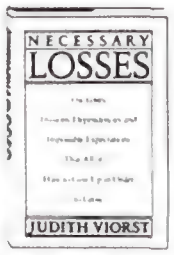


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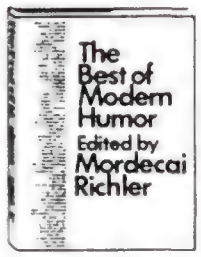


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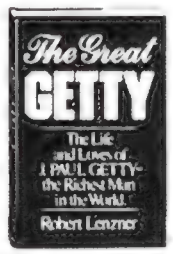


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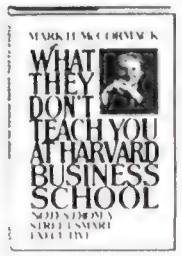


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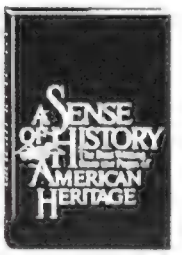


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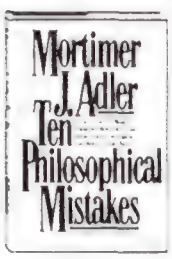


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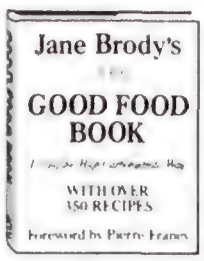


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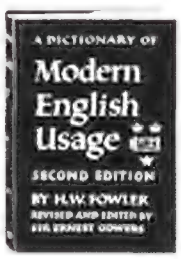


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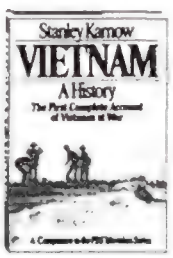


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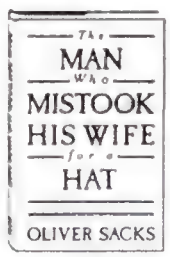


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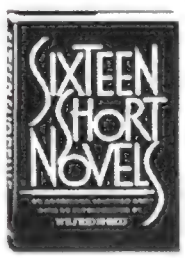


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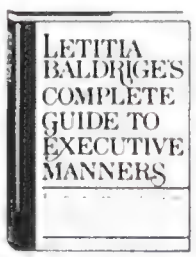


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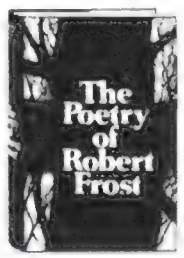


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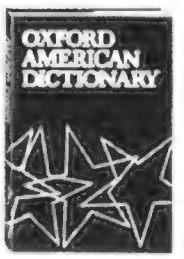


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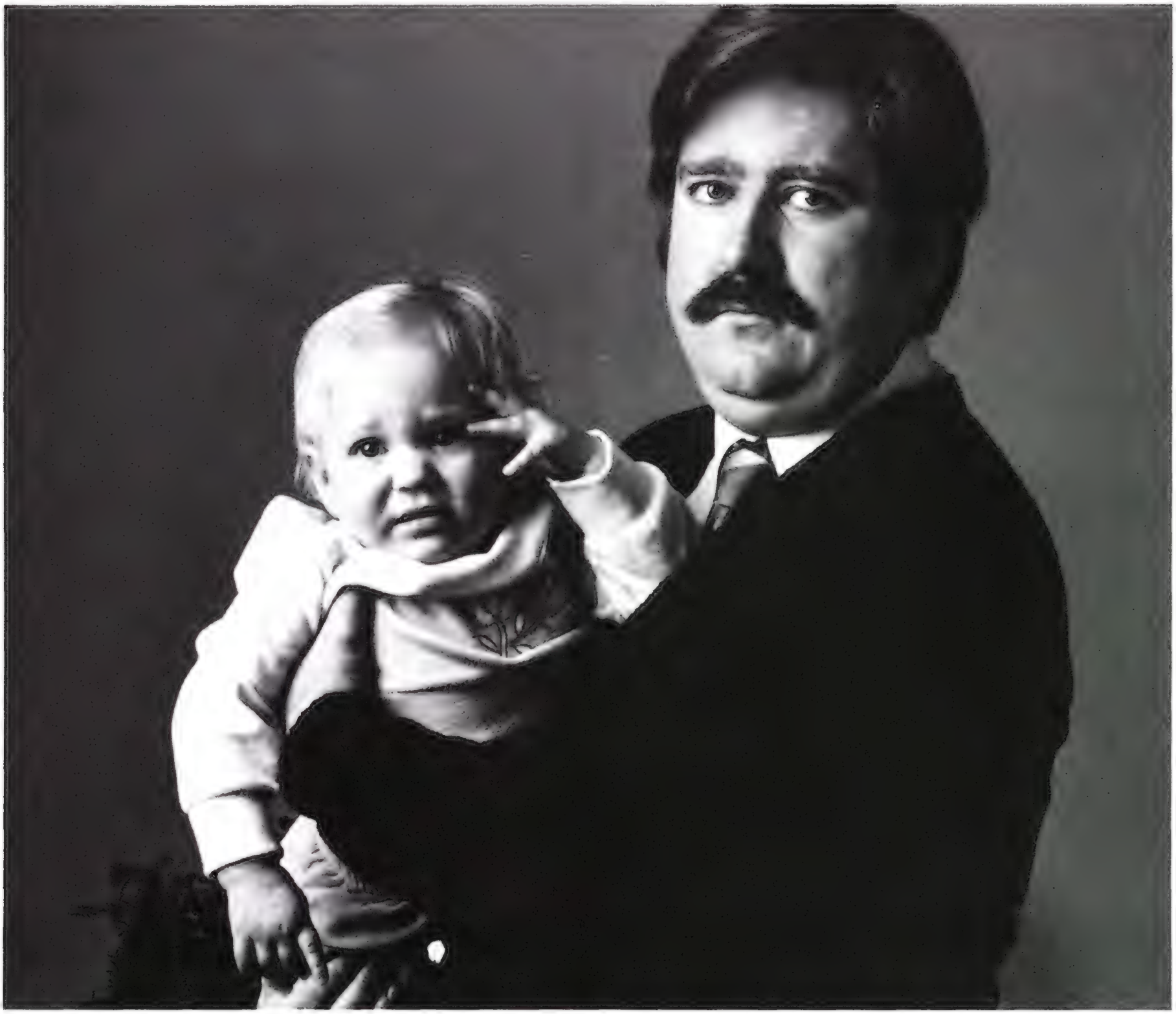

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anyone who has thought about it. Yet the excitement of new understanding, especially when you suddenly understand that things are better than you had thought, is not unlike that of pushing farther and farther into a new and beautiful place.

A few days later still, my friend the wildlife photographer and I are paddling a canoe through more spring sunshine along with Bill Sladen, a world-class birder, medical doctor and Oxford zoologist who has studied penguins in Antarctica, snow geese in Siberia, swans in Alaska. We are on Smith Island in lower Chesapeake Bay, moving through the marshes to islands of high ground where wading birds nest in the hackberry trees. We count yellow-crowned night herons and watch fish crows harassing great egrets on the nest. Sladen sees half a dozen potential projects that would make good PhD dissertations.

Most of the day, however, we spend on a spoil bank, layers of muck deposited by dredges, where only the tasseled stalks of phragmites, the world's most opportunistic reed, grow. The cracks in the mud are so deep that foot-square sections of mud sway when we step on them. Hundreds of herring and greater black-backed gulls are nesting here (no one knows why these largest of gulls are moving south, driving terns and other smaller birds out of their breeding areas). Nests of dead reeds and feathers dot the ground every six feet or so, in the phragmites and in the open. Newly hatched chicks scurry before us while the air fills with white wings. Sladen, who teaches ecology to public health doctors at Johns Hopkins, is here to track the course of an avian disease. Oblivious to the heat and the smell, he works his way through the gullery, popping the samples he needs into vials of chilled culture medium. In this place I would have turned my back on, he is fully engaged, learning something that no one has ever known.

Bill Sladen collects samples of gull guano on dredge spoil site in Chesapeake Bay.

Now the birthday has come and gone. I feel no different from that tracker of mice in fresh snow. Cells have grown and died, but the pleasant knot still comes when I see something new with eyes or mind. The next time I fill out a form, I'll put quotation marks around the 50 to show there is some question involved. And for occupation I'll list opsimath, a wonderful word that means "a person who begins to learn late in life."

*John P. Wiley jr.*

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*By Timothy Green*

# Jade is special, as are the risks in bringing it from mine to market

*Smugglers sneak caravans through a war zone on the Burma-Thailand border, and dealers gamble on stones whose value they cannot 'see'*

Lee Boltin

Contemporary Chinese sculpture in Burmese jadeite depicts Guanyin, Buddhist-Taoist goddess of mercy.

Shan tribesmen repack mules carrying jade over Burma-Thailand border; one man masks his identity.

The thin mist of dawn hugs the valley as a cavalcade of mules picks its way along a streambed beneath a canopy of teak, silk-cotton and bamboo. The mules are laden with wooden packsaddles to which heavy sacks are roped. Men dressed in floppy hats, bush shirts, jeans and sneakers and carrying rifles and shotguns guide the animals forward. They stop for a rest soon after 6 A.M. Two men lift off one sack that is rubbing badly and open it to adjust the load. Inside is a brown boulder the size of a football.

This armed caravan slipping through the jungle on the border between Burma and Thailand is a vital link, not, as you might suppose, in the heroin trade from the Burma-Thailand-Laos border region known as the Golden Triangle but in another profitable international business: jade. Each of those mules guarded by Shan tribesmen is smuggling 100 pounds or more of rough jade from the mines of Burma. Perhaps $15 to $20 million worth of jade passes along the jungle trails each year, humped by mules to such Thai border towns as Mae Sot, Mae Hong Son or Mae Sai, then on by pickup truck to Chiang Mai, the old capital of northern Thailand, where Hong Kong dealers come to bid on it. Then, in Hong Kong, the jade boulders are cut and polished into pendants, bangles, necklaces, fine cabochons for rings, or beautiful figurines.

*Photographs by Michael Freeman*

## *The trade in jade: a high-risk venture*

The clandestine trail exists because the socialist government has never been successful in subduing the Kachin people of northern Burma in whose territory the best deposits are located. The Kachin regard the jade mines as their inheritance, and the revenue produced by smuggling provides the main income for the Kachin Independence Organization (KIO), which seeks autonomy for the region. The country's authorities control just two deposits within the Kachin domain, which provide only enough for the annual Burma Gems, Jade and Pearl Emporium held in Rangoon every February. The Emporium is the sole official outlet for the prized Burmese jadeite preferred by modern carvers and jewelry makers, but offers only about a quarter of Burmese supplies. The bulk is spirited by mule caravan over the Thai border.

Today Burmese jadeite accounts for more than 90 percent of the jade business. Many other natural stones such as chrysoprase, jasper, serpentine and soapstone are passed off as jade, but only two minerals correctly bear the label: jadeite and nephrite (SMITHSONIAN, April 1977). Burma is the most important source of jadeite, although some is found in China, Japan and North and Central America (where Maya and Aztec Indians used to work it). Nephrite is more widely dispersed through China, Siberia, Taiwan, New Zealand, Canada and in such states as Alaska, California and Wyoming, but is mined less.

Although collectively dubbed jade, jadeite and nephrite are different minerals. Jadeite is both heavier and harder, rating 7 on Mohs' scale of mineral hardness to nephrite's 6½ (talc is 1, a diamond is 10). To look at, jadeite is more vitreous or shiny, while nephrite is a fibrous, waxy stone. Jadeite's colors range from pure white to black and often occur in stunning hues of yellow, red, blue, lavender and green, depending on the precise chemical composition of each deposit. The brilliant greens in Burmese jadeite, for instance, are caused by chromium. The most prized jadeite is the translucent rich emerald green known as "Imperial jade." Traditionally, the most valued nephrite, by contrast, was yellowish-white and was called "mutton-fat" by the Chinese.

Historically, jade's reputation was founded on the supremely elegant and simple carvings of nephrite now exhibited in such collections as the Arthur M. Sackler Museum at Harvard, the Asian Art Museum of San Francisco or the Smithsonian's Center for Asian Art, which includes the extensive Arthur M. Sackler Collection (pp. 34-35). Jade has been worked into ritual objects and ornaments in China for close to 7,000 years. The Chinese came to revere its hardness and luster, seeing it as a symbol of protection, health and strength, something fortunate to own and felicitous to give.

Contesting the area surrounding a smuggling route, Wa soldiers guard against troops of a rival warlord.

In Chiang Mai, Thailand, middleman and buyer (right) examine "window" cut in 31-pound boulder.

The art of cutting, grinding and polishing jade (it is too hard to carve in the strict sense) into the most intricate designs was slowly mastered by craftsmen who passed it on from generation to generation. Although in later periods they often got carried away with embellishing tricks, the finest jade object is the simplest. "Ideally, the shape you are looking at should be as close as possible to the original boulder," explains Thomas Lawton, director of the Center for Asian Art. "The craftsman is asking himself: 'How little can I do and still make it a pleasing piece?' "

For centuries the Chinese worked with nephrite transported by camel caravans from the riverbeds of Ho-t'ien and Yarkand in Xinjiang Province in western China. The switch to jadeite began only in the late 17th century when the emperors of the Qing Dynasty extended their dominion into Yunnan Province in southern China and over the border into Kachin territory in northern Burma. The story goes that the first green jadeite came back with a merchant who by chance used a boulder of it to balance the load on his mule. Whatever the truth, the sudden availability of richly hued Burmese jadeite coincided with the flamboyant tastes during the reign of Qing emperor Qianlong (1736-96), who preferred it to the whiter, more opaque "chicken bone" jade or the yellowish mutton-fat nephrite from the ancient deposits of Xinjiang. Nephrite was not eclipsed, but jadeite, with its wider range of colors, has been in ascendancy ever since.

The link between the merchants of Yunnan and the Kachin continued through British rule in Burma, and was broken only after World War II, with British withdrawal and the Communist revolution in China. With the door to China closed for a generation (and the United States forbidding the import of any goods, including jade, from mainland China), the trade shifted to Hong Kong. Traders from Yunnan and the best carvers from Peking (now Beijing) and Shanghai migrated there.

Window in jade boulder suggests what lies inside. With luck, result may be cabochons like those below.

In a Hong Kong office near the jade market, dealers examine smuggled stones they bought in Chiang Mai.

From their new base in Hong Kong, buyers linked up again with the Kachin via Chiang Mai. The government in Burma responded by launching its annual Emporium in 1964, but failed to corner most supplies. The jadeite deposits are scattered over a wide area between the Uyu and Chindwin rivers not far from the small town of Hpakan, about 200 miles north of Mandalay, in the section of Burma that spikes up between China and India. Today, the mining is mixed inextricably with the Kachin's fight for independence.

My own education in the "politics of jade" began in the night market in Chiang Mai, where a former Kachin schoolteacher and sometime jade trader named Arlee has a little stall for selling colorful handwoven jackets, silverware and handicrafts made by the border hill tribes. Arlee, a short, soft-spoken man whose years as a teacher had brought him perfect English, sat cross-legged on a bamboo couch. In the past, he explained, Kachin chiefs were the undisputed owners of the mines, but today mining is controlled by the KIO and its military arm, the Kachin Independence Army.

Buyer (right) holds bangle on which he is bidding, uses hand signals under cloth to show price he'll pay.

Uncovered, configuration of bidder's hand (right) indicates nine ("hundred" or "thousand" is spoken).

"Anyone who wants to mine must first get a license from the KIO," said Arlee. "It is their biggest single source of revenue."

The mine owner, armed with his KIO license, employs a few miners and supplies them with food. They either work a small quarry—hauling out the jade boulders, which weigh anything from a couple of pounds to many tons, with the aid of water buffalo or oxen—or they scour streambeds. A small sector of a stream is dammed and then the diggers ferret through the exposed boulders for jade. Rough jade has an opaque skin, rather like the shell of a nut, caused by oxidation. To the untutored eye it looks just like any other large stone and the true content is hard to detect. That uncertainty is the very essence of the jade game.

It is a gamble from the moment a Kachin miner finds a piece of rough jade until it is cut open in a Hong Kong workshop months later. The logical approach would be to cut it open immediately, but that would spoil the fun—and the potential for profit. The trick, for both seller and buyer, is to stake their judgment on three crucial points: How true is the color throughout the stone? How translucent is it? Are there cracks and flaws within? The only clue is a "window," a small cut in the skin that reveals the surface color. Buyers hunch over the rough jade with flashlights or spotlights to try to determine how deep the color runs and how translucent the kernel of this particular nut may be. It is a battle of wits, experience and luck.

The game starts the moment a Kachin miner locates a boulder. If it is not very valuable, the miners themselves dispose of it to small traders who go round the diggings. But if it looks good, the owner takes it into Hpakan for sale. He then pays half the proceeds to his miners, who divide it equally among themselves. From his own share he must also give a five-percent cut to the KIO, who mark the stone as "taxed." At this stage the price is ten percent of its eventual Hong Kong value.

Now the journey begins. From Hpakan it goes by bullock cart to the larger town of Mogaung, which has been the trading center for jade for 200 years, since the Chinese began coming down regularly from Yunnan. In Mogaung the rough jade is sold secretly to major traders; the more daring Hong Kong buyers even send agents there.

The bidding is always by the secret finger code, an ancient Chinese ritual in which seller and bidder each put one hand under a cloth or other cover (left). The bidder says only "hundred" or "thousand" out loud, then by the configuration of his hidden hand tells the seller how many units he is bidding. If he mutters

*London author Timothy Green specializes in gold and diamonds, but he has expanded an October 1984 article into* The Best Bottled Waters in the World.

In his Hong Kong workshop, Tiger Chu carves jade on treadle grinder. Colleague uses electric tools.

"thousand," two extended fingers mean 2,000 (the price is usually set in Hong Kong dollars), four fingers, 4,000 and so on.

After Mogaung the hurdle is the 400-mile route southeast to Thailand, through wild border country controlled by rival warlords, all eager to exact their toll. Couriers usually belong to, or are under the protective umbrella of, such rebel groups as the Shan United Army, the Karen National Union, the Wa National Army (p. 30) or the Kuomintang, the remnants of Chiang Kai-shek's old Chinese party.

Once the jade is safely in Chiang Mai, five syndicates of Chinese Thais handle most of it, but there are many other small traders. For the Hong Kong dealer bidding in Chiang Mai, the key calculation is how many pieces, and of what value each, he can cut from a stone. "Suppose I can get 100 bangles, each worth 1,000 Hong Kong dollars, that's H.K. $100,000," explained one dealer, "but I need a 25-percent profit, so I offer H.K. $75,000. Of course, if I'm lucky I might get 100 pieces each worth H.K. $1,500 or even $2,000. That's where the gamble comes in."

Experience counts. "I started when I was 13," said a youthful Hong Kong buyer, "and I already have 21 years' experience. You need a good memory, because you must study every piece you buy and remember how the crust of the rough looked, and the color distribution when it was cut. Then, if you see a similar stone, you apply that knowledge. I often recall a stone I saw ten years ago."

Although Chiang Mai is the prime source, no Hong Kong dealer can ignore the Burmese government's annual Emporium. This year, 280 jade buyers from Hong Kong and ten from China turned up at Rangoon's Inya Lake Hotel. In all, $7.4 million was spent for pearls, gems and 262 lots of jade. The prize was a 12-pound chunk of Imperial jade rough that fetched $151,900. The Emporium display underlined the diversity of jade. Alongside choice small pieces of rare Imperial jade were more than 60 lots of the lower quality utility jade, each weighing more than a ton, at best worth a modest $30,000 each. And they were small by comparison with a 36-ton boulder that was offered (but not sold) at the 1983 Emporium; a special road had to be built from the mine to the railway to move that minimountain.

Buying at the Emporium is still a gamble. The visiting dealers preview the jade for a couple of days, but they do not know what their competitors will bid. When auctioneer U Win Pe, a smiling, bespectacled Burmese who has conducted every Emporium since 1964, announces each lot in fluent English, buyers write their name and bid on a sheet of green paper which is then folded and placed in a silver bowl.

Back in the workshop the moment of truth comes when the rough jade is finally cut. "Even the best appraiser can see only 70 percent of the value of the stones," said Hong Kong's Richard Lee, whose family

Women pick through charms at Hong Kong's outdoor jade market. Stone is revered throughout Asia.

# A Sackler sampler

**Nephrite carvings on these pages are from the Arthur M. Sackler Collection, to be housed in the Smithsonian's Center for Asian Art. Stones' shapes and colors dictated the subjects: the artists carved as little as possible.**

**Water dropper for making ink (3rd to 4th C.)**

**Nesting goose, Song (10th to 12th C.)**

**Possible Taoist shaman, Tang (7th to 10th C.)**

**Reclining elephant, Song (12th to 13th C.)**

**Bear scratching ear, Han (100 B.C. to A.D. 100)**

Buddhist heavenly being, Tang (8th to 10th C.)

Reclining pony, Song (10th to 13th C.)

Champion vase, Song (11th to 12th C.)

Bird ornament for staff, Song (12th to 13th C.)

Lionlike chimera, Ming (17th C.)

*Photographs by John Tsantes*

has been in the jade business for years. "He can see the *quality* of the color, but not the *quantity* of the color." As the stone falls apart, the dealer knows at last if the rich, translucent green or lavender or red promised in the window is truly a stream of color throughout the stone, or merely a surface tint. Only then can he plot precisely what to do with it. In practice, most jade ends up as jewelry; carving it into elaborate figurines is too time-consuming and expensive, given there are relatively few collectors ready to pay anywhere from $100,000 to $250,000 for such pieces.

At one of Hong Kong's biggest jewelry manufacturers, B.T. & Sons, I found partner James Woo sizing up new shipments in the vault. More than 20 tons of rough jade was stacked on metal shelving around the walls, looking like great Parma hams in an Italian delicatessen. Most boulders were the familiar Burmese, but one shelf was piled with black stones resembling lumps of coal. "That's black nephrite from Wyoming," explained Woo. "We go to Lander and other small Wyoming towns a couple of times a year to buy. We use it for contrast in jewelry designs."

He was busy marking up a large boulder of commercial jade, from which the top had already been sliced off to reveal delicate lavender stone within: five circles had been carefully drawn on the flat surface as outlines for bracelets. "We'll cut off slices about half an inch thick," said Woo, "and then drill out the bangles."

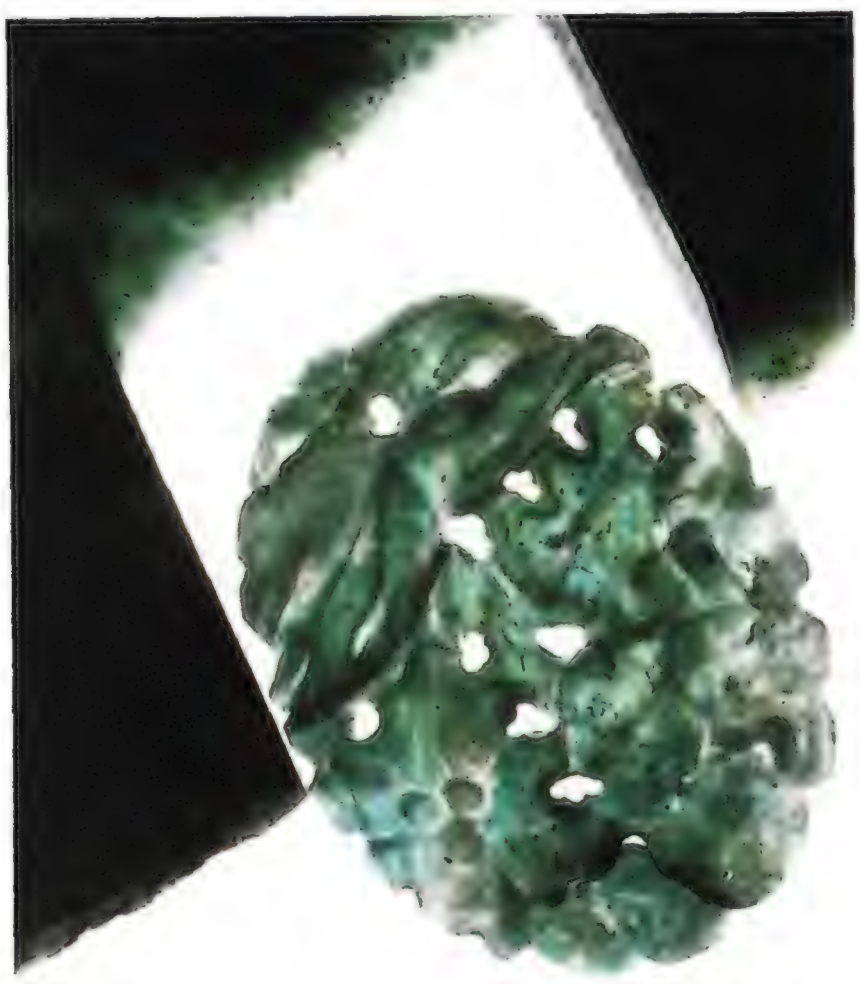
In the adjoining workroom we watched a young craftsman in T-shirt and shorts using a treadle cutter with a rope attached to a steel blade to saw through a five-pound piece of jade. His bare feet made a relentless patter on the treadle, and he regularly fed the blade with a mixture of abrasive grit and water. "We could use a diamond saw," Woo explained, "but this traditional method gives him more control. There is less wastage, because you can cut a very thin slice."

Drills, like those of a dentist, then punch out the center and shape the bangles, which are finally ground and polished on diamond wheels. Woo selected two samples. "We'll sell this simple bangle for about $1,500 and it will retail for about $5,000," he said. "The other has a good fine grain and will cost about $10,000 to $15,000 in the shops."

Modern commercial pressures, however, have not entirely overrun the tradition of great carving. The Chu family, an aged father and his five energetic sons who moved from Shanghai to Hong Kong in 1949, have preserved it. "My father started with two of the best teachers in Shanghai when he was 12 and now he's 76 and still working jade," said his son Jonas proudly. "He never went to school, he can't read, he just knows jade carving."

Although to earn a steady living the Chus now make fine jade jewelry, their hearts are still in carving. "When you've spent a long time in this business you don't work only for money," said Jonas Chu. "Sometimes we just enjoy ourselves. But jade carving is very slow, and it takes a long time to sell, because the market for jade carvings is narrow: just a few collectors here and in Japan and America."

Chu was figuring out what best to do with a big



Earrings of jadeite set in gold filigree are from the collection of jeweler Kai-Yin Lo in Hong Kong.

A piece of jadeite carved for jewelry (it's less than an inch across) rests in the slab from whence it came.

block of jade, measuring 15 inches square and eight inches deep, lying on a piece of sacking on the floor. He poked it with the toe of his shoe. "We bought this from friends who got it at the last Emporium," he said. "One side had been cut in Burma, but they cut the wrong side. When our friends got it back here they cut the other and inside it's much better, lavender and green, so we paid a high price." Already Chu had sketched a few pencil outlines on the surface of how he might cut the block. "The question is," he went on, "is it one or two or three carvings? And what will the subject be? I think we'll make three figurines, but it's an expensive material and you've got to be careful, can't make mistakes. We'll think about it for a few weeks."

Once the decision is reached, young apprentices will cut the outline, and then the Chus themselves will set to work with diamond drills to shape the delicate features. "It'll take half a year at least," said Chu. "Sometimes you have to change the design as you go, because as you cut deeper the color may change." The results are remarkable. He opened up some boxes stacked in a corner of the room. In one was a delicate lavender-and-green carving of a fairy riding on a deer, being presented with a peach by a child; the deer and the child with the peach both symbolize long life. "A good birthday gift," Chu suggested. But an expensive one at more than $100,000.

Although many craftsmen, like the Chus, moved to Hong Kong after the revolution, the jade business is being revived in China itself. Not only are the Chinese trying to woo the Kachin in Burma to sell directly across the border into Yunnan province, but representatives from China's National Arts & Crafts Import & Export Corporation in Beijing and from Guangdong Arts & Crafts Company in Guangzhou (Canton) are big buyers at the Rangoon Emporium. The Chinese spent nearly $700,000 on 17 lots at the 1985 show.

To judge how China was shaping up, I took the train one morning from Hong Kong to Guangzhou to visit the Canton South Jade Crafts Factory. In the lobby I was greeted by a triangular-shaped boulder of rough jade five feet long, weighing more than 1,500 pounds. Preliminary sketches for cutting it into bangles had already been drawn on the lavender-green surface.

Upstairs the main work floors hummed with activity as nearly 200 workers bent over drills and polishing machines, sustained in the oppressive heat by endless cans of Coca-Cola. One floor specialized in jewelry, another in highly embellished carvings of exotic boats, ornamental swords and pastoral scenes. Many of the carvings, I soon discovered, were in soapstone and serpentine. But a few workers were carving jadeite.

China's trump card is low labor costs. But can it wrest back from Hong Kong the expertise in carving, manufacturing and marketing that has migrated there over the last generation? Store buyers are not always impressed. "Hong Kong is better now than China," said Marilú Klar (p. 38), vice president for jewelry and buyer for Gump's in San Francisco, which has long set the pace in American jade tastes. "I've made seven trips to China, and I find a lot of new designs are hideous. They glop them up too much."

Nineteenth-century jadeite beads are separated by gold rings and black nephrite, possibly from Wyoming.

Jadeite cabochons show range of hues. Calipers are used to measure, brass templates to guide the shaping.

Marilú Klar of Gump's stands between two Pi, each representing Heaven. Price for the pair is $30,000.

Hong Kong, of course, displays plenty of overembellished jade, too, especially in hotel shops. But the scores of jade shops along Canton Road on the Kowloon side and in the nearby Yau Ma Tei (Jade Hawkers' Bazaar) offer an unequaled choice. At the bazaar, located under a highway underpass, 400 stalls sheltered by multicolored umbrellas stock everything from ornate carvings to the simplest ring; you can even buy chips of jade as souvenirs. Amid a sprinkling of tourists, most buyers are Chinese, looking for a charm for a new baby, earrings or a bangle for a girlfriend or a pendant for a relative.

Many of the hawkers specialize. Chan Yau Shing, for instance, stocks red jade; he has more than 500 red pendants on display. And he is happy because he has sold H.K. $10,000 worth this morning to a wholesaler from Taiwan. Another customer inquires about a price. Chan Yau Shing says $1,300. The chap offers $300 and moves on. "There's no fixed price; it depends on the type of customer and how much I think he'll spend," says Chan, "so you might sell at $500 to one or $1,200 to another." Then he adds a word of caution. "Be careful: there are some fakes around."

The hazard is not just other stones being passed off as jade, but of jade that has been dyed to enhance its color. Skilled Hong Kong operators can dye jade a richer green, for instance, by heating it slowly to 212 degrees F and soaking it in chromium salts for two hours. The dye penetrates the cracks and interstices between the jade crystals and may fool the innocent eye. A good "dye job" can be hard to detect, but buyers should beware of jade in which the color seems to "float" on the surface, indicating that the dye has not penetrated deeply.

Local buyers prowling the bazaar are alert to such tricks. They know their jade and are adept bargainers. Yet price is not necessarily the main consideration. "Asians understand the value and rarity of jade," says John Ng, a Chinese jade specialist and president of Jade N Gem Corporation of America, who has settled in Los Angeles and written a book, *Jade for You*. "The Chinese or Japanese have no hesitation in buying good pieces to give their families or friends for good luck. To the Asian, giving jade conveys a special feeling."

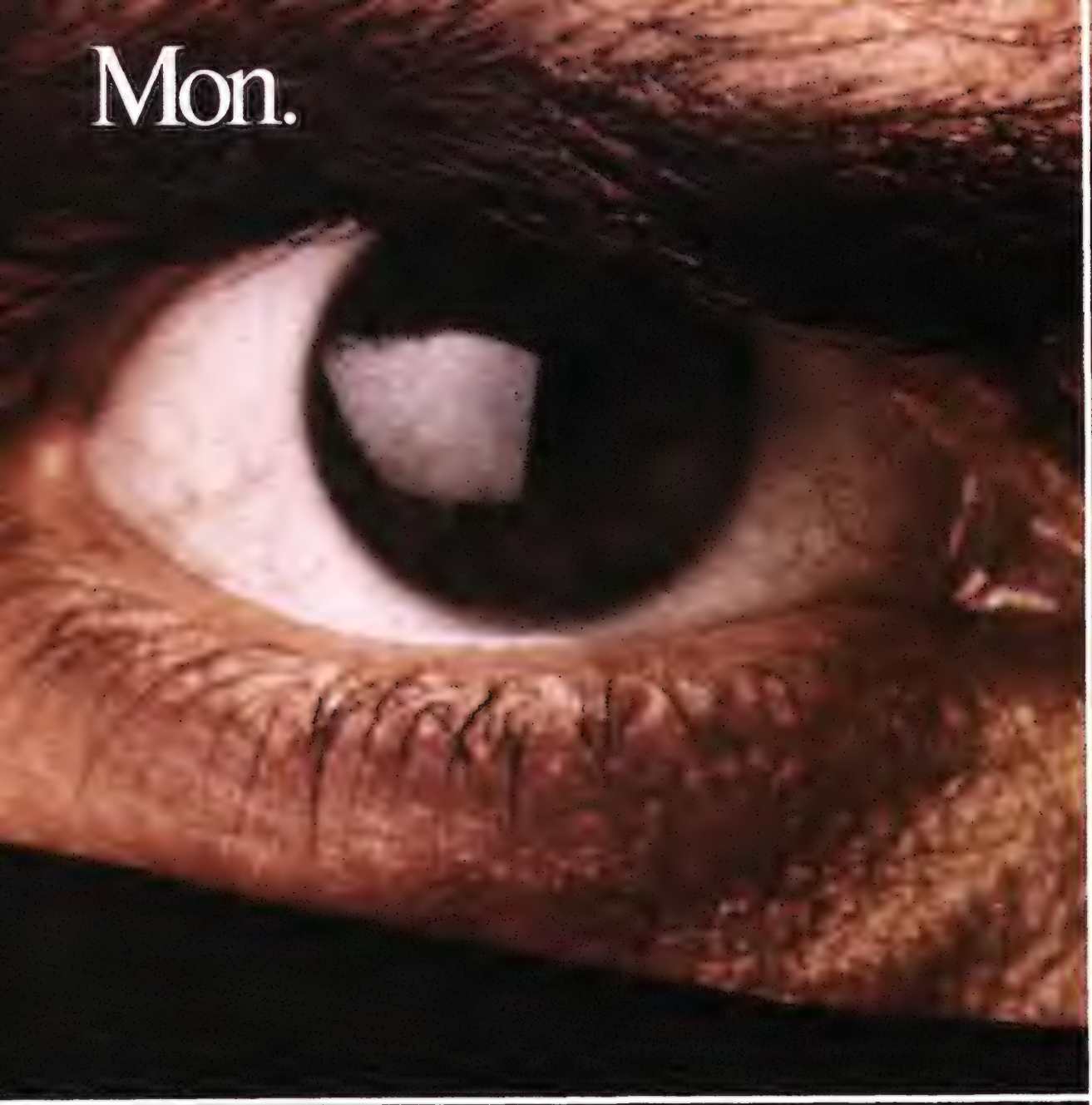
Such sentiments, coupled with jade's traditional cachet as a talisman, are not really understood by many Americans seeking only a bargain. The absence of clear standards of color and quality (as exist for diamonds) also confuses them. "Jade is a great mystery to most American jewelers, let alone customers," said John Ng, who has set out to dispel some of the mystery. In *Jade for You*, Ng and his collaborator, Edmond Root, offer scales of tone, texture and translucency, along with a color-grading chart rating jewelry jade from "A" for exceptional to "E" for acceptable. More than 20,000 of their charts have already been bought by jewelers.

Educating Americans to a true appreciation of jade may not be easy, but no one has worked at it more assiduously than Gump's, a San Francisco specialty store. Step through the doors on Post Street and you will find an octagonal room hung with Chinese paintings between showcases filled with jade. Take your pick from green jadeite studs for a dress shirt at $900 to an 18-karat gold bracelet set with a great green cabochon, almost the size of a mini-TV screen, at $60,000.

Over the years Gump's has provided the basis of many collections now in American museums, including the Avery Brundage Collection in the Asian Art Museum of San Francisco. Some of the staff spend a lifetime devoted to jade (one of the salesladies has been there since 1937). Marilú Klar herself learned the game from Martin Rosenblatt, who bought jade for Gump's from 1915 until 1965.

Gump's loves customers who treasure their jade and do not see it as a quick investment opportunity. "Jade is an investment for another generation, not this one," said Marilú Klar. "I'm on my fourth generation with one family of collectors." She likes to think that her jade goes to good homes. "If it's not a good home," she confided, "it upsets us a little bit."

Husky flood-prevention workers appear in detail from seven-ton jade mountain in Forbidden City, Beijing.



Thurs.

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Fri.

Wed.

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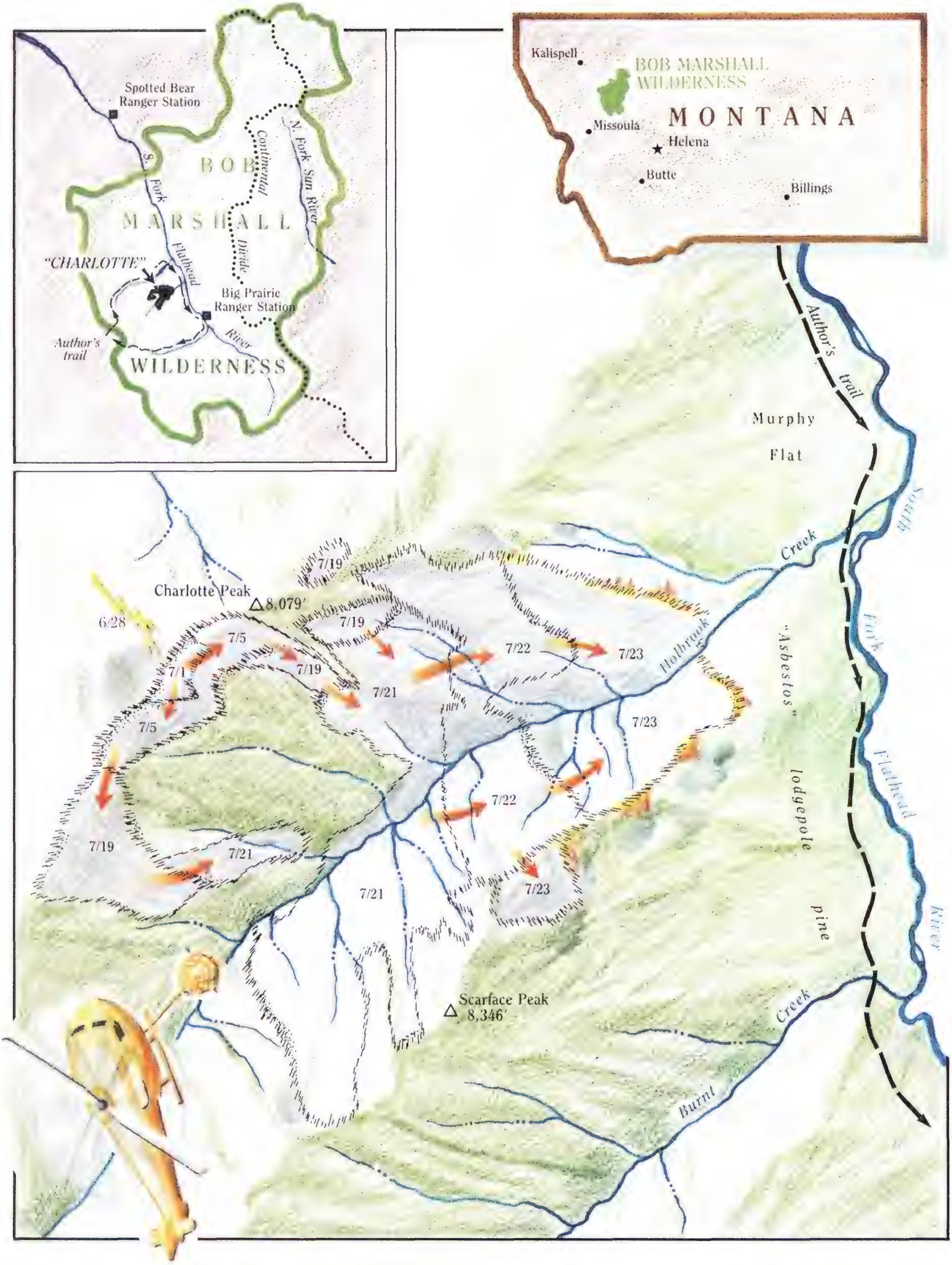
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MONTANA
Missoula
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7/5
7/1
7/19
7/21
7/22
7/23
Holbrook
"Asbestos"
lodgepole
pine
Scarface Peak
△8,346'
Burnt
Creek

*By Jeffrey J. Smith*

# When let-burn fires get ready to roll, campers hit the trail

*Sometimes, as the author and his friends discovered, Uncle Sam's prescribed-fire policy can put the heat on backcountry travelers*

USDA Forest Service

Opposite: Map plots spread of fire "Charlotte" from July 1 (left center) and author's route in Bob Marshall Wilderness area. Lightning sparked blaze June 28; as conflagration spread, smoke obscured sunset (above).

We had been planning a July camping trip in Montana's Bob Marshall Wilderness for months and just before my two friends flew into Missoula, where I live, I called the Flathead National Forest office in Kalispell. I had heard that a fire was being allowed to burn in the same general vicinity we were headed for, and I was relieved to learn that it was not expected to affect our route. The morning we first caught sight of the blaze, we were more than 20 miles from the trailhead on our fourth day in. It was burning on the south side of Charlotte Peak, an anvil-shaped, 8,079-foot mountain in the Flathead Range. We watched for a while as the flames in the Douglas firs torched the edges of the scree slopes below the peak's summit, and then we continued on down the trail toward our destination, the South Fork of the Flathead River.

Until recently, we would not have watched that fire alone. Instead, the U.S. Forest Service's Regional office

*Photographs by Laurance B. Aiuppy*

USDA Forest Service

During fire's second week, west wind blows smoke across Charlotte Peak escarpment. South Fork of the Flathead River is visible at top, above Big Salmon Lake. Author, companions hiked around fire to river.

in Missoula would have mobilized a small army of suppression forces as soon as the flames were spotted. We would have seen several pairs of smokejumpers arrive first, parachuting from prop planes (SMITHSONIAN, March 1985). If that initial attack failed, then reinforcements would have shown up via helicopters to dig fire lines aimed at stalling the fire's spread. If the second level of intervention failed too, support crews would have moved in to carve a base camp below the fire for more than 100 men and women plus their equipment—chain saws, helicopters and water pumps. The old idea, as Smokey Bear constantly reminded us, was to prevent fires wherever and whenever they happened to occur.

Today, forest fires are no longer considered uniformly bad. Those that threaten private timberlands and commercial forests managed by the federal government obviously remain a matter of serious concern. In this regard, the fire season of 1986 already promises to be one of the worst on record, particularly in the Southeast, where thousands of acres have been incinerated. Out West, however, in 16 million acres of coniferous forests that have been set aside as national parks or as wildernesses on other federal lands, some fires are now regarded as natural and they are allowed, within limits, to burn. Such blazes do not "destroy" forests; they regenerate them, and they have been performing this vital function for millennia.

One important factor in the evolution of this new "prescribed fire" policy was the passage in 1964 of the Wilderness Act. This legislation established vast tracts of wilderness which are to be "protected and managed so as to preserve [their] natural conditions." To many forest ecologists and conservationists, the act mandated a profound shift in attitude toward fire.

A precedent was established 18 years ago in California's Sequoia and Kings Canyon national parks, when lightning-caused fires in high-elevation zones were allowed to burn uncontested. In the early 1970s, officials in Region One of the Forest Service—which consists of 26 million mountainous acres mostly in Montana and northern Idaho—conducted a special fire study in the Selway-Bitterroot Wilderness. Researchers painstakingly analyzed the history of the area's towering stands of flame-resistant ponderosa pine. On some slopes, they concluded, lightning-caused fires had burned at least once every decade. On others, they found thick patches of lodgepole pine trees whose cones were so tough that fire was an absolute necessity if their seeds were to be released. As part of the study, researchers watched one 1,200-acre blaze consume almost as much timber in six weeks as 216 fires had burned in the preceding 47

*When he is not out enjoying the wilderness, Jeffrey J. Smith is usually writing about natural resources from his Missoula, Montana, home.*

More than nine months after fire, snow masks burn area, but grasses and shrubs are already recovering and germination of new trees has begun. The signs of fire damage will be visible for another 25 to 40 years.

years. When they were satisfied that natural fires were both beneficial and controllable, Region One officials established a prescribed-fire program and set about gradually expanding it.

It was not easy. Forest Service policymakers had to figure out how to monitor fires instead of suppress them. Sophisticated lightning-detection systems, remote weather sensors, high-altitude scanners and computer software designed to predict fire behavior all came into play. The trick was to manage people as well as fire, so that campers and fishermen could still travel the backcountry even as the fires burned.

By the end of 1979, nearly two and a half million acres of Region One forest, mostly wilderness, had entered the program. Each time a new area was designated as a free-fire zone, a special fire-management plan was drawn up for it. A plan establishes guidelines for tolerating blazes and includes a description of an area's fire history, its vegetation and fuel types, the prevailing weather patterns and the likely environmental effects of a natural fire. Right now, nearly five million acres in Region One are under prescription for natural burns.

A plan for the Bob Marshall wasn't implemented until 1983 because it is one of the most volatile wildernesses in the area and is therefore among the riskiest to manage. Well over half of the million-acre preserve burned between 1885 and 1930. Close to a third was consumed by flames in one year alone, 1910. And here's where the risk enters in: more than 90,000 people hike and camp in the Bob Marshall in a typical year. The bulk of those visits occur in July and August, during the peak of the fire season.

The fire plan for the Bob Marshall divides the land into seven units and analyzes each one for its potential to burn. A natural fire is to be permitted, the plan asserts, unless it becomes a threat to public safety or adjacent private lands. The highest concentrations of heavy fuels are in the 311,555-acre Big Salmon Unit on both sides of the South Fork of the Flathead River. There, the plan says, under exceedingly dry and windy conditions a lightning strike could quickly incinerate 20,000 acres—and everything in them.

We reached the South Fork of the Flathead around noon. By then, the anemic white smoke we saw that morning had changed. The fire had found heavier fuels. Now a distinct column of dark brown smoke drifted into the blue sky. After a rest, we again moved south on down the trail, this time through a dog-hair-thick forest of lodgepole pine. Then, in the stifling heat of mid-afternoon, we made a crossing of Murphy Flat, a pine-studded plain that seemed to go on forever, until finally the trail broke for the river and we stood close to water, ready to camp.

I pulled off my boots, put on a pair of canvas sneakers and grabbed my fly rod. I stepped into the South

Sensor of lightning-detection system records strikes and transmits information to computer at fire center.

Fork's frigid, transparent flow below the mouth of Holbrook Creek, and, sure enough, native cutthroat trout rose to my Royal Wulff fly. Paradise at last! When I waded the deep current for a better casting angle, I gained a perspective on Charlotte Peak for the first time since noon. The mountain was about four miles to the west and now a black-and-orange convection column above the blaze was thick enough to obscure the sun. I had been so intent on the rhythm of my casting that I hadn't noticed the strange, translucent light. I could see flames on the ridge between the peak and where I stood. And I could hear something—a wind-in-the-trees kind of sound, only lower and malevolent, like a growl. The smoke column bent with the wind and flowed east, right over my head. Then, at last, it dawned on me: that fire was coming right at us.

That same Sunday, Dave Bunnell (p. 50) was watching one of his sons play softball in Whitefish when the dispatcher at his office paged him. As the fire-management officer for the Flathead National Forest, Bunnell was responsible for wilderness fires. He had injured his foot playing ball just three weeks earlier—the same week a three-pronged lightning bolt struck below Charlotte Peak. Now, not yet halfway through the fire season, he was already fatigued. The first six months of the year had rivaled the two driest periods in Montana history. Though the Flathead wasn't as bad as other forests in the Region, it was getting there.

The dispatcher relayed to Bunnell a report she had just received from the lookout atop Spotted Bear Mountain on the northwestern perimeter of the Bob Marshall. The lookout had seen a column of smoke more than 18,000 feet high mushrooming from Charlotte Peak. The evening before, aerial reconnaissance had reported that the fire was spreading into the lower elevations a few miles up Holbrook drainage. Bunnell had expected the moisture in the creek to inhibit the fire there. Instead, it was making its run. He left the game and hurried to his office in Kalispell.

### *Technology confirms lightning strikes*

An automatic lightning-detection system (left) had mapped lightning strikes in the Charlotte Peak area on June 28 and aerial reconnaissance the next day confirmed three "smokes." One of those fires went out. Officials declared the Charlotte Peak fire "within prescription," that is, it conformed to their written guidelines for natural fire. They sent a team of smokejumpers to quell the third because it threatened to burn out of control. The fire they named "Charlotte" found a niche in the sparse vegetation above 7,500 feet and smoldered just west and south of the peak for the first three weeks of July.

When he got to his office, Bunnell tapped a few keys

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on his computer and summoned the Region's daily "situation report," which arrived via electronic mail every morning from Missoula. The National Weather Service was forecasting little wind and no change in the pattern of upper-90s temperatures. Bunnell tapped a few more keys and called up the hourly readout from the Remote Automatic Weather Station (RAWS) on Spud Point, a 7,950-foot peak several miles west of Charlotte Peak. The satellite-relayed message told Bunnell that the winds were continuing normal on Spud Point—upslope at two to four miles per hour. But for the second night in a row, the RAWS unit had measured negligible humidity at 7,900 feet. That meant the vegetation closest to the fire was drying out. Bunnell decided that he had to get up there and see what was going on.

He rendezvoused with his pilot, Dave Hoerner, at the airport and they climbed into the Forest Service's leased cream-and-red Cessna. When they reached 9,000 feet to fly over the peaks of the Jewel Basin 45 miles northwest of the fire, Bunnell could see the unique cumulus plumes of Charlotte's convection column. As they drew closer, he could tell that the fire was active on two fronts now, one to the east of the peak, the other to the southeast. The eastern front was the one I met while standing in the South Fork with my fly rod. The other front was the one that had Bunnell worried. He watched it send windblown firebrands onto the north-facing slopes of Scarface Peak a few miles south of Charlotte Peak. After that it was as if an incinerator ran the slopes of both mountains. Bunnell hadn't expected anything like that to happen until possibly the middle of August.

Bunnell pondered his choices. He could put the fire out at a cost of about $1 million. He could let it burn and exclude all visitors. Or, he could put off a decision until he got back to the office and looked at the long-range weather forecast. He decided to wait. He didn't want to exclude visitors from the wilderness. He just wanted to keep them safe. But notwithstanding all of the technology involved, he recognized that fire prediction was still, in the end, a highly speculative endeavor.

When he got back to the office to review the weather forecasts again, Bunnell received some unsettling news. Strong winds could blow over the Swan Range to Charlotte's west the next day and low pressure might

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Fire-management officer Dave Bunnell calls up daily wilderness-fire report on computer in Kalispell office.

Fire-fighting equipment at aerial depot includes a portable computer kit as well as more traditional tools.

drop them into the Holbrook drainage. Charlotte was getting ready to roll.

There was little time to prepare our catch that evening. Richard and I boiled the cutthroat together with parboiled rice and dried vegetables. When Terry arrived from fishing upstream, we sat on the riverbank and gulped our only substantial meal of the day.

We were not students of fire behavior but we understood its sound and we knew that its respiration was a whole lot more powerful than our own. I remembered noticing a mysterious insect in the river while I was fishing. Where a few minutes before nothing but my Royal Wulff had bobbed in the swells, now these quarter-inch black nymphs suddenly appeared. They were riding the current, dancing in the eddies and piling up behind the rocks close to the bank where we were sitting. "What are those bugs?" I asked Terry, the most scientific of fly-fishermen. He leaned down and pinched a few out of the water. "These aren't insects," he said. "These are singed pine needles." Our eyes met and we drew the same conclusion: the fire could now spread beyond its forward line as easily as raindrops fall from a cloud. "Let's get the hell out of here," Richard said.

We bushwacked up into the lodgepole pines and found the trail upriver. We kicked more singed pine needles on the trail. There was little perspective in the thick and darkening forest and no way to gauge the fire's spread. Five miles up, still heading south, we ran out of daylight. We had hiked almost 20 miles that day and we were ready to drop. Richard took off his pack and collapsed face-first into a stream that cascaded nearby. He did it for dramatic effect but he could have knocked himself senseless on a hidden rock. It was time to bivouac. We stretched out in our sleeping bags beside the trail and went to sleep. At least the malevolent growl was gone.

*When a fire threatens to run away*

During the past 15 years, Forest Service managers have presided over 47,000 acres of prescribed fires in Region One. There have been no deaths or injuries in the northern Rockies, yet the program has not escaped criticism. Some people object to the costs; others complain about the risks. When a fire within the Selway-Bitterroot Wilderness threatened to get out of control a few years ago, it took 600 men and a half million dollars to contain it. Other prescribed fires in the same area have burned up to 16,000 acres and conflagrations on that scale can trigger the jitters in and outside of the Forest Service. In 1979, a large fire in northern Idaho—not a prescribed burn but a fire that was being fought—took one life. That same year, a prescribed fire in the Targhee National Forest jumped its boundaries,

roared down into cattle- and sheep-grazing allotments and had to be contained. Many citizens had trouble distinguishing between fires that were being tolerated and those that were being suppressed. It did not help matters the following spring when a prescribed burn in central Michigan turned into a forest manager's nightmare. Pushed by unexpected winds, it spread out of control, killed one bulldozer driver and destroyed more than 40 homes and cottages.

Clearly, it was time for a reevaluation of the program. The chief of the Forest Service, R. Max Peterson, summoned regional managers from all over the country to a powwow in Missoula. The officials hammered out tighter restrictions on natural fires, established new training requirements for prescribed-fire personnel and designated each regional forester responsible for the program's implementation.

*Charlotte descends from her perch*

As we unrolled our sleeping bags along the trail that night, the designated manager of the fire, Rich Lasko (below), an itinerant fire-behavior specialist working with Bunnell, flew into the Spotted Bear Ranger Station. He had just spent two weeks working a pair of blazes in western Montana, one of which began within the city limits of Missoula. Now his next major preoccupation, the fire called Charlotte, was beginning a descent from her alpine perch.

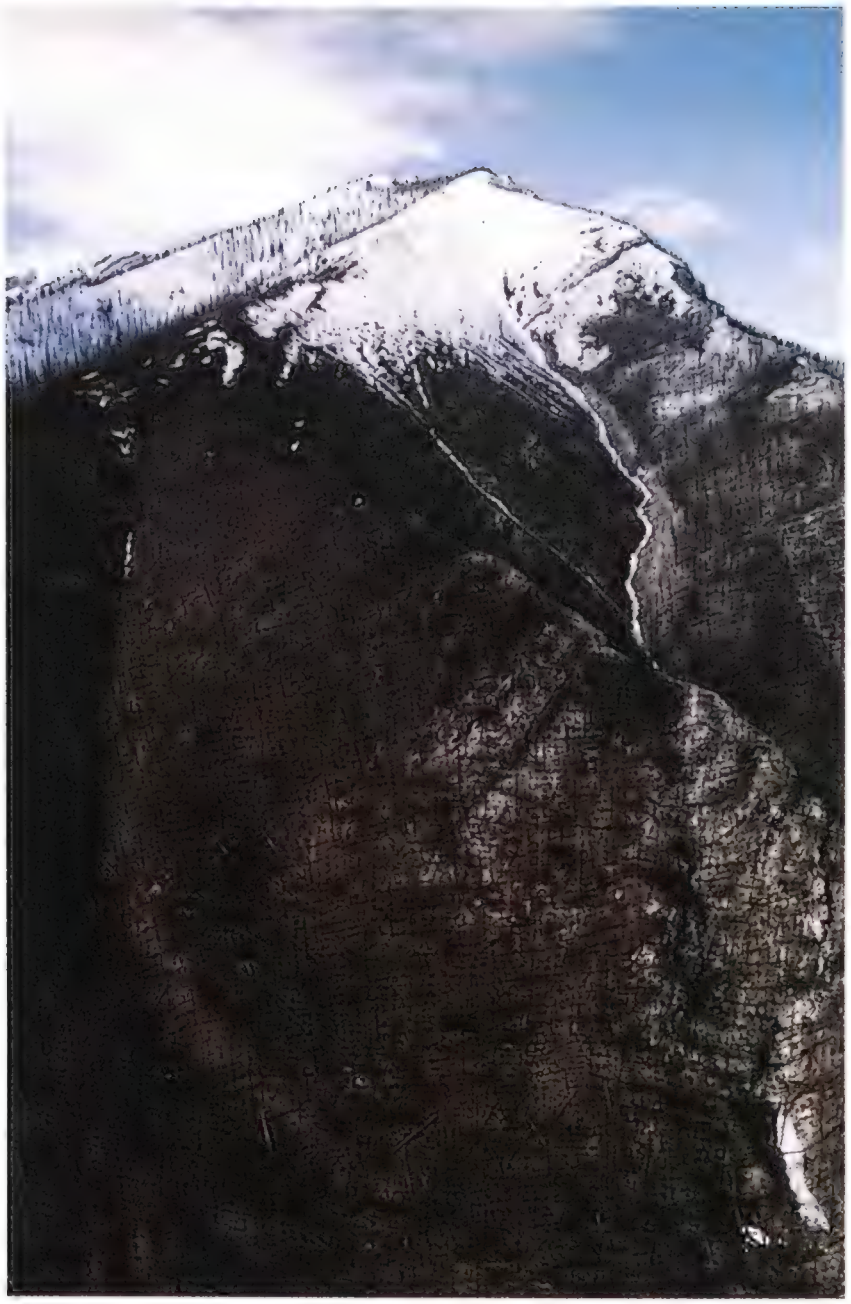
Lasko didn't think Charlotte was yet in a position to reach the South Fork. Previous fires had scorched a mosaic of different-age timber around the peak. The thick stand of lodgepole pines we had passed through earlier that day was one tile in that mosaic. Called "asbestos forest" by experienced fire fighters, it constituted a fire-resistant barrier to the west of the river.

Other patches of timber were not so fire resistant. Just across the South Fork, to the east, there were "heavy fuels"—meadows thick with dry grass, stands of old-growth timber and an accumulation of ground debris. If and when the flames reached the South Fork, moreover, they would be subject to increasingly complex and unpredictable weather patterns. And so once that blaze surged across the river, it would be a whole new ball game.

Lasko estimated that it would take a 40-mile-an-hour westerly wind before the fire could break through the shield of young lodgepoles and jump the river. Winds of about half that velocity were predicted for the next day. If anything more powerful than that came up, Lasko would implement the safety plan he and Bunnell had written. They would lock up the whole river bottom near Holbrook Creek, evacuate anyone found on the trails and send in a helicopter, if necessary, to find stragglers.

Fire specialist Bob Mutch, an ex-smokejumper, uses video camera to record advance of blaze from airplane.

Rich Lasko, manager of Charlotte Peak fire, calculates potential behavior of flames in lodgepole-pine forest.



Forest on Scarface Peak, located several miles south of Charlotte Peak, shows effects of intense burn.

Next day, we hiked the final mile south to the mouth of Burnt Creek, which put us six miles and one whole drainage away from the fire. That morning, I caught the largest cutthroat of the trip in a shallow ripple against a log on the far side of the river. Even Richard, who had wet a line but a few times in his life, caught a couple of fish. Around midday, we ate another vegetable-and-trout gumbo and talked for a long time in the shade of the trees on the bank.

By early afternoon, we could see smoke mushrooming from the top of Scarface Peak (above), which lay about three miles to the west. This was a menacing new development. During the next hour, we began to hear the fire's roar, and a wind began to funnel smoke in a high, broad band over our heads. Suddenly, orange flames licked the sky above the closest ridge. The fire was following us into Burnt Creek.

For the second time in two days, we quickly piled all our things into our packs and headed south, upstream. We avoided the trail this time because it bent back into the trees. We could catch it later. We went a couple of miles flat out before we stopped in a meadow to look back. Smoke poured from the entire hollow between Scarface and Charlotte peaks. I was struck by how normal the trees looked just in front of the fire. They weren't shaking or tumbling. Instead, they stood straight up, appearing almost serene before the wall of flames hit them.

One hundred miles to the southwest, Regional fire specialist Bob Mutch (p. 51) and two fire fighters from California were circling in a twin-engine plane above a persistent little blaze on the edge of the Selway-Bitterroot Wilderness. Ground crews were trying to prevent it from entering the well-settled Bitterroot Valley. Mutch and the Californians observed the fire's progress until late afternoon when something else caught their attention. A 30,000-foot cumulus cloud tinged with charcoal appeared on the northeastern horizon. Charlotte was sending up her smoke signals, so they changed plans and flew up there.

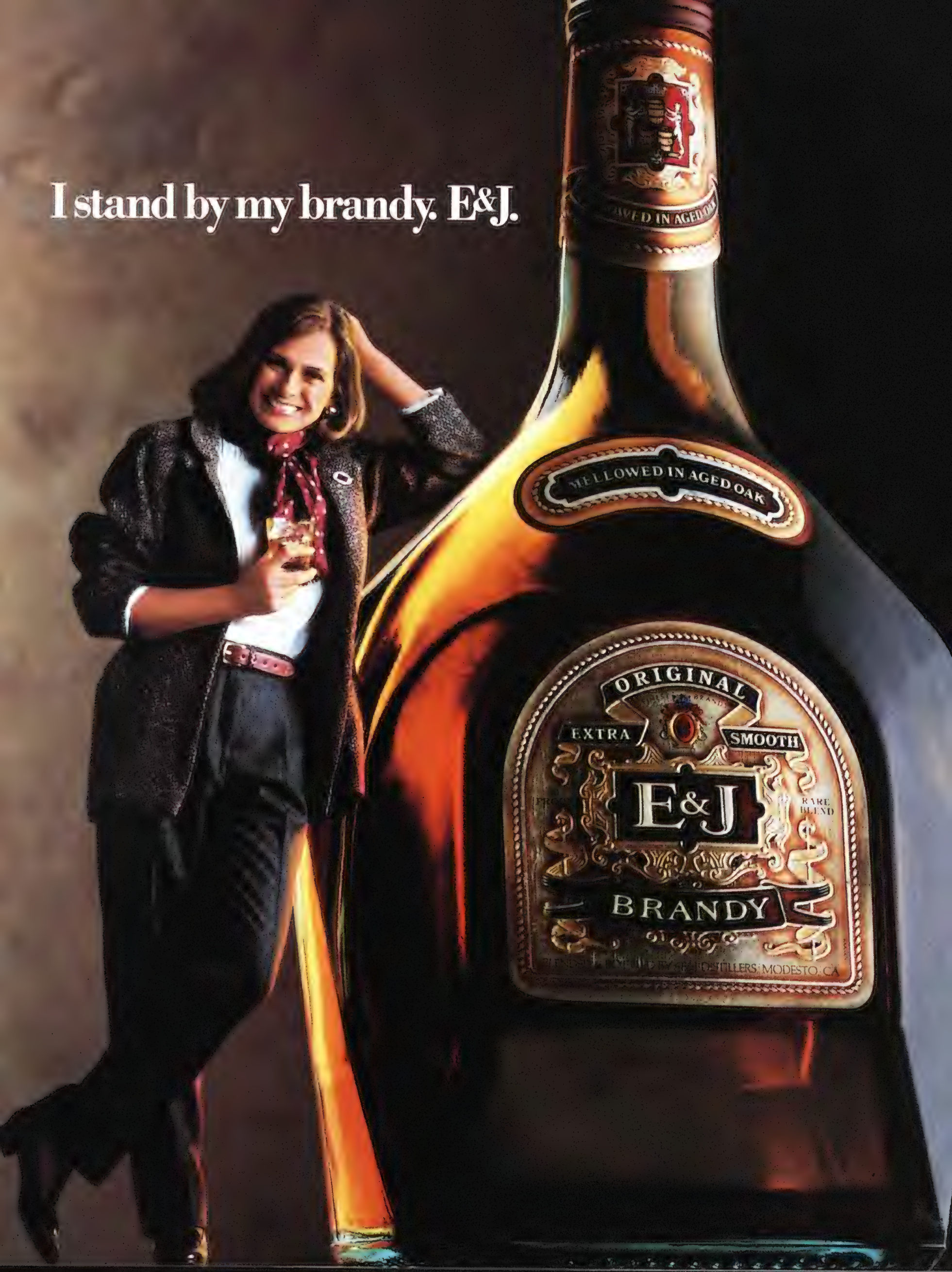
*Confining an aggressive fire*

When they got close, they saw fire spreading down two separate drainages into the lodgepole pines by the river. This was highly unusual, aggressive fire behavior. One of the fire fighters turned to Mutch. "Just what *is* the prescription for this fire, Bob?" he asked. Mutch glanced one more time at the fire. "We'll try to keep it in the Bob Marshall for the rest of the summer," he said.

Mutch was one of the architects of the prescribed-fire program in the northern Rockies. Yet as confident as he had been when the Bob Marshall plan was approved two summers earlier, looking at this powerful force now raging without human interference made Mutch feel awfully puny—and nervous. He thought it would be only a matter of time before the flames surged across the South Fork and climbed all the way to the Continental Divide.

At about that same time, Dave Bunnell was circling above the fire in another plane. He shared Mutch's assessment that Charlotte would soon jump the river. "We were really concerned with a major shift in the wind that would have driven the fire up or down the South Fork," he said later. At Spotted Bear Ranger Station, Rich Lasko remained confident that the lodgepoles would keep the fire away from the river. The RAWS unit was recording wind gusts peaking at 21 mph, but when he saw the forecast for the next day he wasn't so sure. Severe winds and thunderstorms would roll through western Montana late in the day. When Lasko radioed this information to Bunnell, he decided to close 12 trails and seal off the entire river bottom. Lasko radioed this decision to Gordon Ash, the ranger in charge of the Big Prairie Ranger Station, a seasonal facility five miles southeast of the fire. Lasko told Ash to saddle his horse and ride the trails on either side

# I stand by my brandy. E&J.




80 Proof Brandy. E&J Distillers. Modesto, California. © 1986

of the river. Ash and his assistant acted promptly and found a dozen people camped within the danger zone and escorted them from the Holbrook Creek area.

Richard, Terry and I met Ash and his partner at the gate to the ranger station at 8 P.M. We rested awhile, talked with a few of the 18 men and women spending their summer there, then pushed on to camp a few miles upriver. We could still see the fire raging into the night at the top of Scarface Peak, but it was obvious that it could no longer threaten us.

Montana's drought ended abruptly during our second night south of Big Prairie. A drenching rain that fell for hours not only stopped Charlotte's spread, it extinguished her entirely. That was the storm the National Weather Service had forecast, and it was a precursor of an August and September no one could possibly have foreseen. Both months set precipitation records in Montana.

"We manage fires for public safety," Dave Bunnell told me three weeks after our trip. "But a person can still be endangered. I feel very strongly that once a person crosses the line into a designated wilderness area, he accepts certain risks. If you break a leg coming down out of the mountains, you've got a problem. You can't communicate with me and I can't communicate with you. By golly, you're on your own."

You're on your own. Bunnell is expressing the keystone of the wilderness ethic. But does our willingness to accept certain limits to human intervention absolve the Forest Service of responsibility for any accidents that may result from its prescribed-fire program? For all the advanced technology, the lightning sensors, the computer-assisted fire-behavior projections, the space-age weather forecasts and the ever-present helicopter backup, what happens if someone is killed?

Forest Service managers can only assume—especially when they publish press releases announcing prescribed fires and post warnings and trail closures at trailheads—that the Wilderness Act and other Congressional mandates grant them the authority to use fire as a management tool. So far there have been no injuries or deaths due to prescribed fires in the Rockies and therefore there have been no claims of negligence. And negligence would be the determining factor in any liability suit.

Mutch invited me back to Charlotte Peak in mid-August to see the results of the fire. We flew on the South Fork from the north, banked west over Scarface Peak and made several corkscrew runs over Holbrook Creek. It was beautiful. The entire belly of the drainage was singed black for several square miles. As Rich Lasko had predicted, Charlotte had drawn up short of the river in the lodgepole pines. Our anxiety was well founded; the fire came within a third of a mile of Murphy Flat. It scorched enormous swaths of timber, but it was selective at the same time, leaving isolated islands of green at the edges of creek-to-ridgetop death zones. To the north and south, it expired in the scree. To the west, it carved an intricate mosaic through the

Though Charlotte incinerated needles and consumed ground cover, new life will emerge from the ashes.

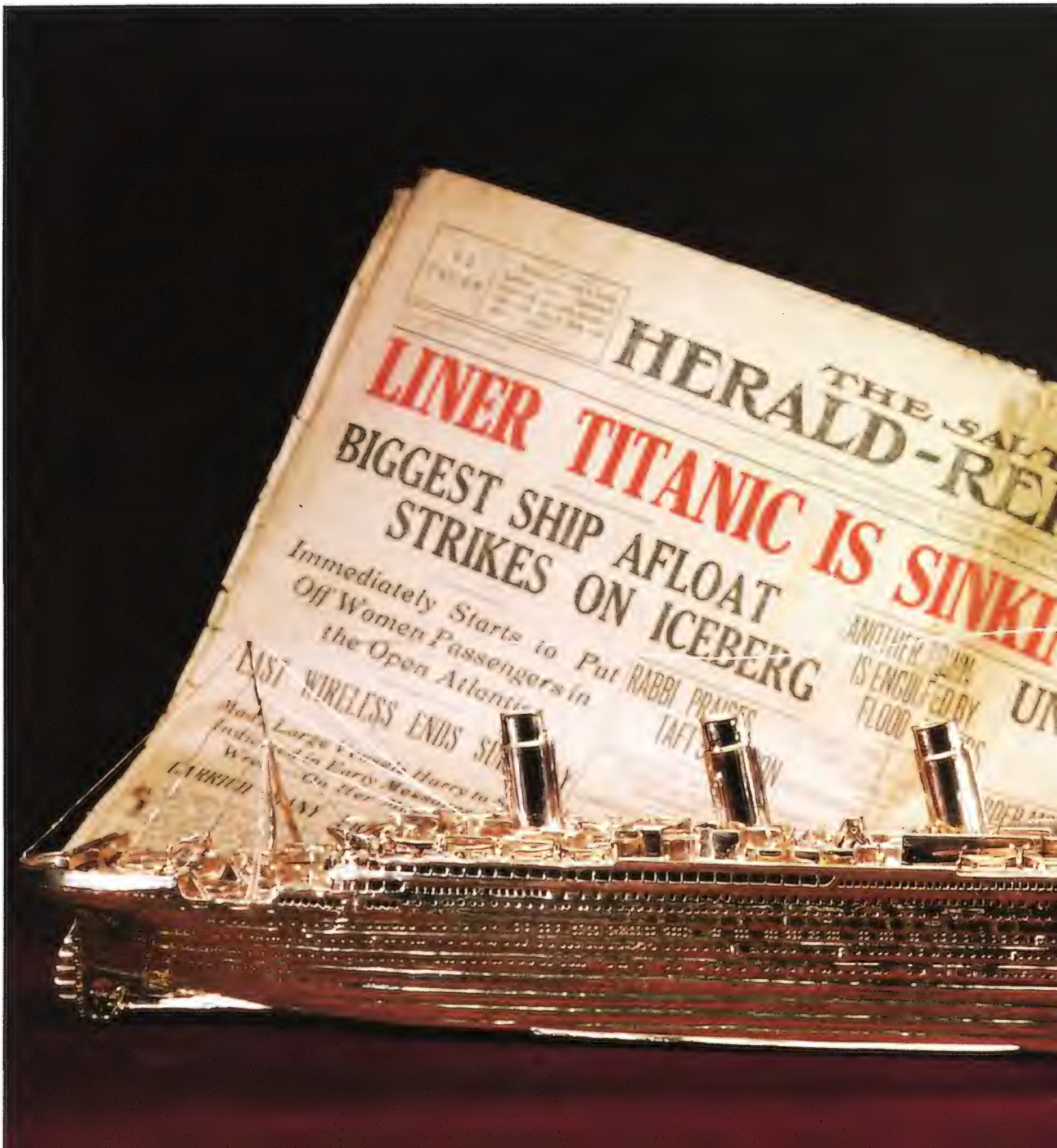
Douglas firs, knife-edges of black with tesserae of brown that followed the whims of the ridges. In all, it consumed a little less than 5,200 acres.

The Forest Service has devoted considerable resources to the natural-fire program. The men in the field have balanced their reliance on the new technology with their knowledge of the land itself. Fire managers like Mutch, Bunnell and Lasko aren't afraid to get saddle sore and each has spent years dealing with wildland fires. So far, they have entered the right information into the computer programs. They have interpreted weather forecasts with sufficient skepticism to result in a remarkable safety record. And their approach has reduced the likelihood of truly catastrophic fires by preventing excessive timber accumulation. The wilderness has benefited from their work and so, therefore, have those of us who love and enjoy it.

Welcome back, primal fire.

*By Joy Waldron Murphy*

# The search for the *Titanic* is over but now a rush for the 'gold' has begun



*Although it does not contain much booty, the recently discovered wreck is a lucrative target for scientists and entrepreneurs alike*

It took three years to build her. Even before she slipped off the ways at the Harland & Wolff shipyard in Belfast, she was considered something special. Gigantic passenger ships had been plying the treacherous sea-lanes of the North Atlantic for decades, but she was the newest, the largest, the most luxurious liner in the world. And ever since she rammed an iceberg and sank on her maiden voyage nearly three-quarters of a century ago, the *RMS Titanic* has continued to exert a powerful hold on the public's imagination. At least 100 books have been written about her. She has been featured in a dozen movies. Scientists and treasure hunters have dreamed about finding her and last summer an international epidemic of *Titanic* fever broke out when an expedition of American and French investigators finally did.

The U.S. team, led by marine geologist Robert Ballard of the Woods Hole Oceanographic Institution in Massachusetts, was exploring the rocky ocean floor with a submersible camera sled towed from a Navy research vessel. The French had conducted their sweeps topside using new sonar equipment aboard an elaborately outfitted ship owned by the Institute for Research and Exploration of the Sea (IFREMER) in Paris. Late in the afternoon of September 2, the unmistakable hull was discovered resting upright in 12,500 feet of water about 400 miles southeast of Newfoundland. The expedition succeeded in taking a series of remarkable photographs and, with that, the mystery of the *Titanic*'s whereabouts was solved at last.

But the story does not end there. Now that the cele-

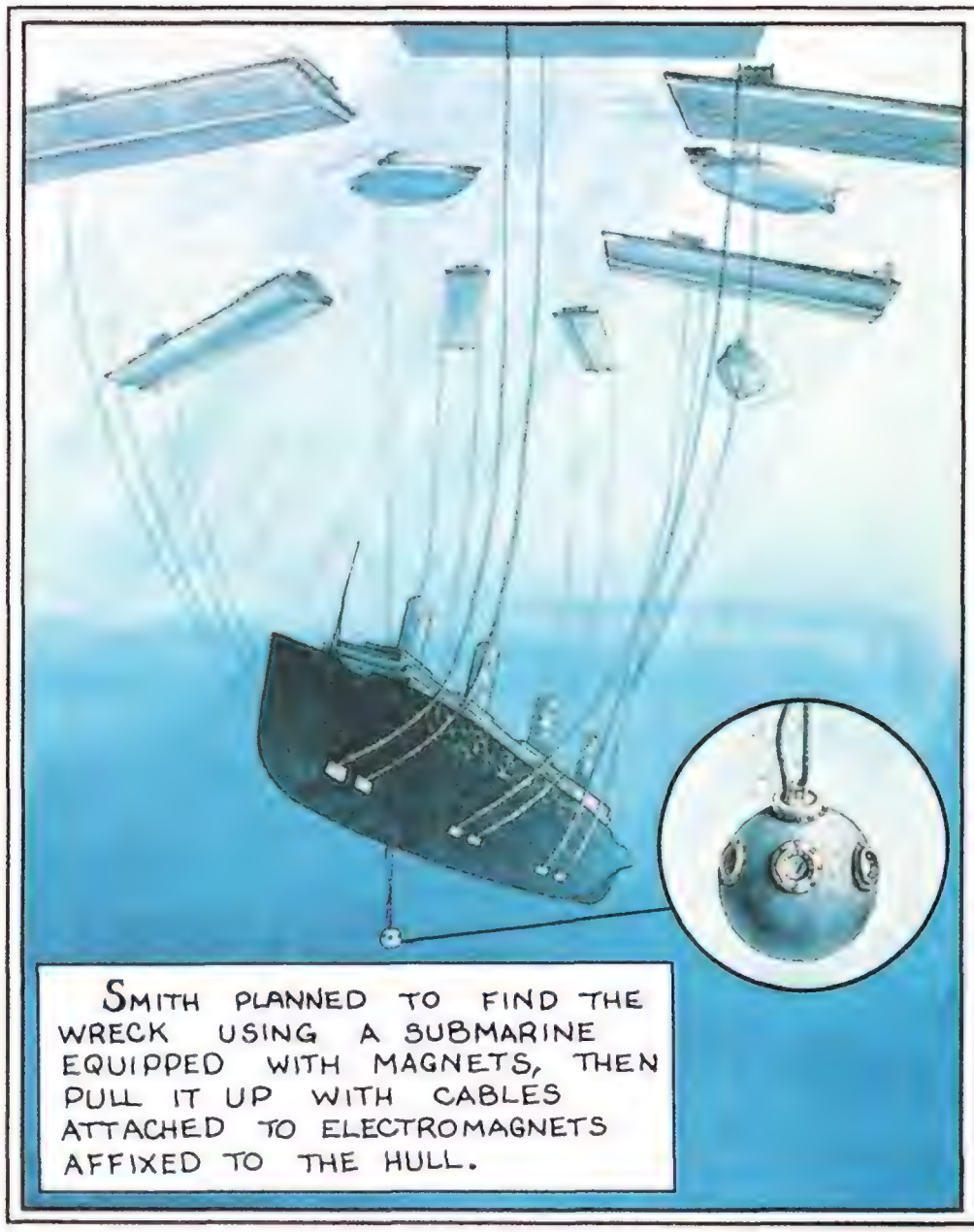
Photograph taken last summer at 12,500 feet shows liner deck with drumlike capstans and winches intact.

Gold model of *Titanic* belongs to Texas tycoon Jack Grimm, one of several who seek to film the shipwreck.

brated ship has been "discovered," a rush is under way to cash in on it. No fewer than five different parties are involved in various schemes to photograph, salvage or otherwise exploit the wreck. "Everyone wants to get out there first," says Jack Grimm, a flamboyant Texas oilman and the veteran of three earlier searches. This summer, predicts Welsh salvage expert John Pierce, "the navies of the world will be converging on the site."

The lineup of contestants is a curious collection of legitimate scientists and colorful entrepreneurs. Ballard, who is famous for his role in the discovery of hydrothermal vents in the ocean floor, intends to photographically survey the *Titanic*, including its interior. At this writing, he is scheduled to be back over the ship in July. Engineer Jean-Louis Michel of IFREMER, Ballard's counterpart on the 1985 expedition, also plans to photograph and explore the *Titanic* this summer. Grimm wants to visit the wreck site in order to complete a pair of documentary films. Pierce, a mechanical engineer who raised the Greenpeace flagship *Rainbow Warrior* after it was scuttled in New Zealand last summer, is seeking investors to finance a refloating of the liner. Michel Jean-Pierre, an underwater construction engineer in Louisiana, has thought up the most bizarre scheme of all. He's putting together a cruise package that features underwater guided tours of the *Titanic*'s resting place.

According to William Ryan, a geologist with Columbia University's prestigious Lamont-Doherty Geological Observatory and a veteran of several *Titanic* searches, the capacity to salvage the ship exists right now. "The only question," he says, "is how much money you're willing to spend." In 1974, the U.S. Central Intelligence Agency spent an estimated $350 million to raise part of a Soviet submarine that lay 16,000 feet below the surface of the Pacific Ocean. Since then, advances in computer science, communications and other technologies have resulted in the development of manned and unmanned submersibles that can dive deeper and do more than ever before. The contest to reach the *Titanic* boils down largely to a race between these ultramodern vessels.


SMITH PLANNED TO FIND THE WRECK USING A SUBMARINE EQUIPPED WITH MAGNETS, THEN PULL IT UP WITH CABLES ATTACHED TO ELECTROMAGNETS AFFIXED TO THE HULL.
IN 1966, DOUGLAS WOOLLEY VOWED TO WRAP PLASTIC CONTAINERS AROUND HULL, FILL THEM WITH GASES AND GENTLY FLOAT SHIP TO THE SURFACE.

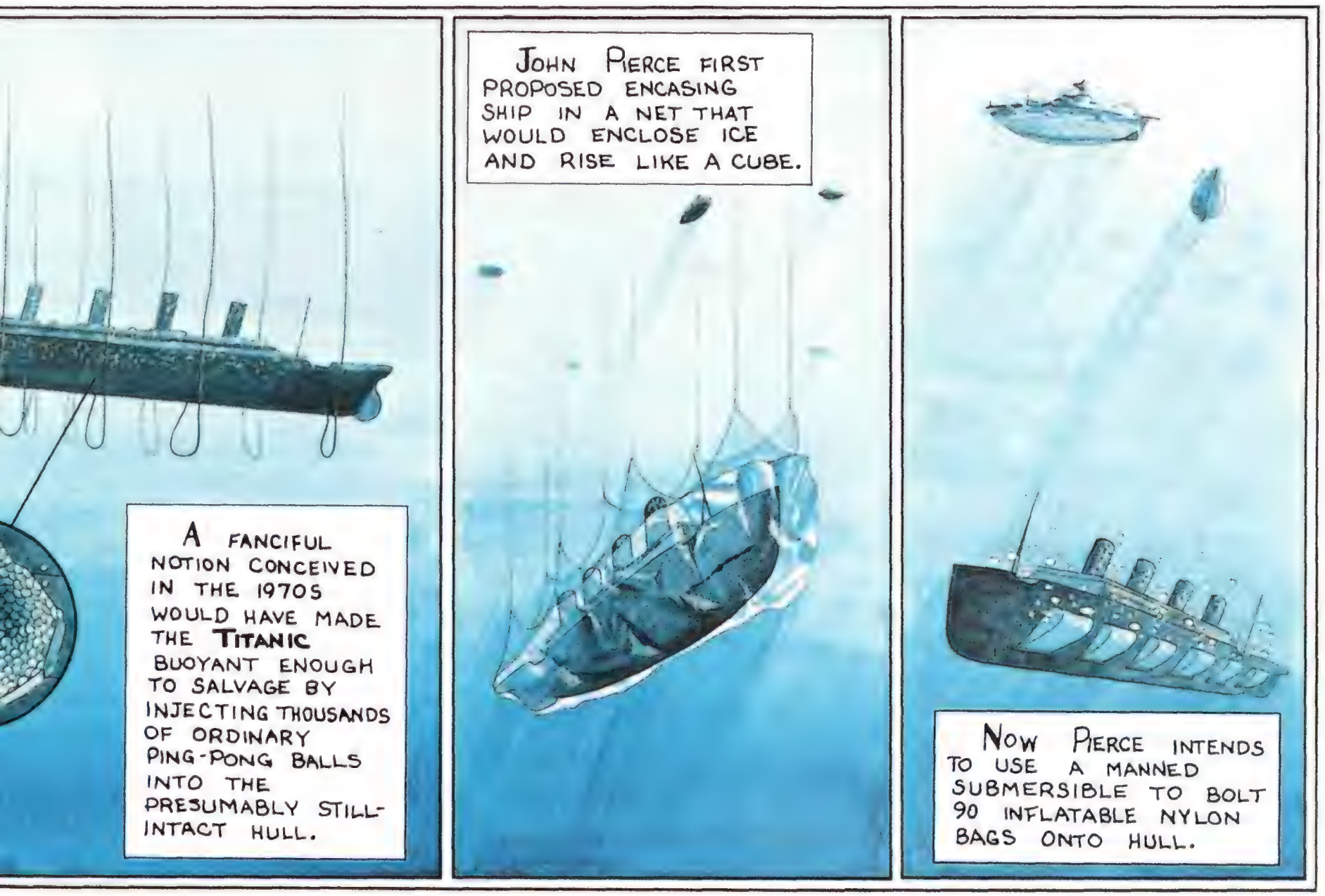
Soon after the *Titanic* went down, people started dreaming up ways to raise her. Artist's interpretation of five such schemes begins at left with Denver architect Charles Smith's 1914 electromagnet tactic.

Fame, fortune and national prestige are at stake. Notwithstanding various rumors about a treasure trove of jewelry, cash and other valuables, the sunken ship contains little booty per se. But thousands of artifacts are entombed within the hull or lie scattered on the ocean floor nearby—everything from wine bottles, suitcases, ship's bells and brass fittings to passenger memorabilia and such miscellany as ashtrays, silver platters and chamber pots. Some of these items could well be valuable as souvenirs and it seems certain that book opportunities, film sales and media competition for coverage of the search activities will generate hundreds of thousands of dollars.

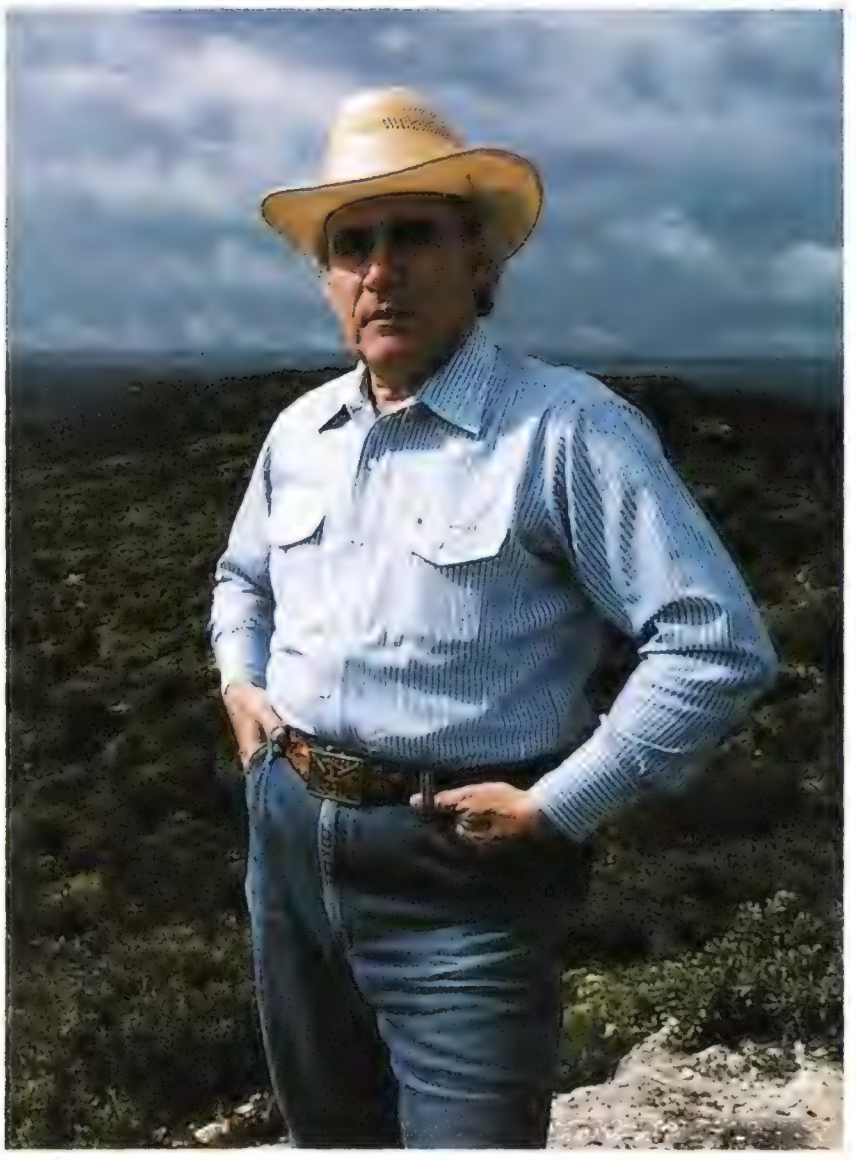
Most of the searchers have pledged themselves to donate any artifacts recovered to museums. One way or another, however, money-making figures prominently in all of their plans. IFREMER and Grimm hope to get back the considerable costs of their expeditions. John Pierce has been trying to negotiate an exclusive media deal with a London newspaper and TV network. Robert Ballard's lecture fee has skyrocketed to as much as $10,000 and he has engaged an aggressive entertainment lawyer to represent him.

At least one seasoned treasure-hunt watcher views all of this hustling with dismay. Calvin R. Cummings is the Denver-based senior archaeologist for the National Park Service and a consultant to the National Oceanic and Atmospheric Administration. "This is no different from any other treasure hunt," he says. "Their purpose is scientific, but in my opinion the motive is commercial, whether it's financial gain or some other form of aggrandizement."

The issues surrounding the exploitation of the *Titanic* are fraught with emotion. The hull is a tomb for hundreds of bodies, and many people believe that it should be left untouched. Ownership is another problem. Englishman Douglas Woolley claims that he acquired rights to the vessel about ten years ago from an underwriter in Doncaster and he has threatened to sue Grimm and others if they remove any goods from it. Under admiralty law, however, a wreck in international waters has traditionally been considered


A FANCIFUL NOTION CONCEIVED IN THE 1970S WOULD HAVE MADE THE TITANIC BUOYANT ENOUGH TO SALVAGE BY INJECTING THOUSANDS OF ORDINARY PING-PONG BALLS INTO THE PRESUMABLY STILL-INTACT HULL.
JOHN PIERCE FIRST PROPOSED ENCASING SHIP IN A NET THAT WOULD ENCLOSE ICE AND RISE LIKE A CUBE.
NOW PIERCE INTENDS TO USE A MANNED SUBMERSIBLE TO BOLT 90 INFLATABLE NYLON BAGS ONTO HULL.

American geologist Robert Ballard, holding thumbs up after 1985 find, is returning to the site this summer.



Jack Grimm, who mounted first serious *Titanic* search in 1980, is determined to visit the wreck next year.

the property of opportunistic salvors unless it is being guarded or salvaged by its owners.

Protection of the *Titanic* has recently become an issue in the U.S. Congress. Last September, Representative Walter Jones of North Carolina introduced a bill called the Titanic Maritime Memorial Act of 1985. If it becomes law, the *Titanic* could one day be shielded by international agreements. While the bill is pending, Congress has asked for a moratorium at the shipwreck site, but the searchers seem determined, for now, to forge ahead.

The object of this commotion was the pride of the mighty White Star Line in Liverpool. In the climate of fierce competition that characterized the transatlantic trade in the early 1900s, the size, luxury and speed of a liner were not its only selling points. The public wanted assurances of a safe voyage, too. Ferocious gales and menacing icebergs made any northern crossing a risky adventure and the *Titanic*, with its vaunted double hull and 16 watertight compartments, was built to take whatever nature dished out. When one boarding passenger asked a steward about that, the reply was immensely comforting: "God himself could not sink this ship."

The *Titanic* embarked for New York from Southampton on April 10, 1912, carrying the cream of New York and London society plus a thousand second-class passengers and immigrants. Four days later, other vessels along her route began radioing iceberg warnings to the liner, but Captain E. J. Smith steamed confidently ahead at 22.5 knots. Then, shortly after 11:40 P.M. on April 14, a number of passengers and crew members felt a tremor. An iceberg had ripped open the *Titanic*'s supposedly invulnerable hull. Less than three hours later, the stern rose and the ship slid almost straight down.

Scientists who have analyzed the sinking believe that the four-block-long liner descended at a speed of around ten miles per hour. A massive implosion probably occurred soon after it submerged, which may have caused the stern to break off between the third and fourth funnels. Approaching bottom about 15 minutes later, the ship straightened out and smacked into the ocean floor with tremendous force, causing tons of silt to fly up wildly.

The rescue ships that responded to the *Titanic*'s SOS did not find the liner at the latitude and longitude her radioman had announced: 41 degrees 46 minutes north, 50 degrees 14 minutes west. The 700 survivors were picked up in lifeboats eight miles to the east. As the years went by, historians and searchers

*Joy Waldron Murphy is now working on a book about the* USS Arizona, *the battleship that was sunk at Pearl Harbor and still rests there.*

# THE COLOR OF LIFE

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became increasingly convinced that the original fix was wrong. Various theories emerged to explain what had happened—the *Titanic*'s officers incorrectly estimated the time, they miscalculated the rate of speed, winds and currents took the foundering ship away from the official position and so on. Whatever the reason, the wreck's location remained a puzzle that fascinated the general public and challenged generation after generation of *Titanic* buffs.

It didn't take long for people to start thinking up schemes to salvage the ship. In 1914, an architect in Denver named Charles Smith proposed to find the wreck by equipping a submarine with electromagnets that would be attracted to the liner's steel hull. Then, other powerful magnets would be attached to the *Titanic*, cables would be fastened to them and barges would winch the ship up. Smith's plan never did appeal to backers and, subsequently, interest in the *Titanic* waned as two World Wars and the intervening Depression dominated the public's attention.

In the mid-1950s, Walter Lord's classic book about the liner, *A Night to Remember*, was published and a British movie was based on it. One of the many young people who fell under the book's spell was Robert Gibbons, who is now a 43-year-old physicist and historical researcher in Springfield, Missouri. In 1963, Gibbons helped found an organization that became known as the Titanic Historical Society. At one point, he proposed to look for the liner with a TV camera system that could be lowered to the ocean bottom from a ship. The project would have cost $600,000.

*Ballard tries lowering a camera*

"The Society decided to back one of Robert Ballard's projects instead," Gibbons recalls somewhat ruefully. The 44-year-old Ballard, a dynamic and charming scientist who once worked as a porpoise trainer at Sealife Park in Hawaii, heads up the Deep Submergence Laboratory at Woods Hole. In the late 1970s, he proposed to find and photograph the *Titanic* using the vessel *Alcoa Seaprobe*, outfitted with a camera lowered on lengths of drill pipe. His follow-up plan was to descend to the ship in the *Alvin*, a submersible that had been used in his pioneering geological work. In a camera test off the New England coast, however, the drill pipe broke, effectively putting an end to that idea.

About the same time, Ballard formed a private company called Seaonics International Ltd. with photographer Emory Kristof and several others. In June 1978, Kristof boarded the Coast Guard cutter *Evergreen* at St. John's, Newfoundland. Destination: 41 degrees 46 minutes north, 50 degrees 14 minutes west. Just north of the reported sinking site, Kristof deployed his cameras to check out the systems and condi-

Michel Jean-Pierre is organizing a cruise for 75th anniversary of sinking. His office address reflects date.

Welsh salvage expert John Pierce (left) and colleague display *Titanic* picture. Pierce says he'll raise wreck.

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World's largest and most luxurious liner leaves the harbor at Belfast for its sea trials on April 2, 1912.

Crew members on French deep-sea research ship launch *Nautile*, a submersible for use in *Titanic* project.

tions on the bottom. The resulting pictures indicated that visibility was good for more than 100 feet and that the current was nearly nonexistent.

Not long after that, a private British company, Seawise & Titanic Salvage, was formed to mount a search expedition. It was headed by John Grattan, formerly the Royal Navy's senior salvage expert. The firm planned to spot the wreck with sonar scanners and then lay transponders around it. The transponders would emit signals identifying their position to the surface ship. Based on that information, the ship would send down an unmanned submersible equipped with brilliant lights that would take still and video pictures. It was a clever notion but apparently investors were not impressed; the company came up short of funds.

Grattan was by no means the first creative thinker to see his *Titanic* dream die aborning. In 1966, Douglas Woolley, who started the Titanic Salvage Company in Hertfordshire, England, announced plans to encase the ship in hundreds of plastic containers. Passing an electric current through the water inside the containers, he believed, would release gases that would then buoy the hull to the surface. That scheme, together with a search for the liner, required $5 million and Woolley could not raise it.

A couple of other imaginative ideas for floating the

Eight days later, the *Titanic* embarked on maiden voyage from Southampton with over 1,400 passengers.

*Titanic* were concocted in the 1970s. One of them called for the injection of thousands of Ping-Pong balls into the ship's hull. In 1979, John Pierce came up with the idea of wrapping the liner in an enormous net and pumping nitrogen into the net. The nitrogen would cause the water around the ship to freeze and it would then rise, just as ice cubes float in a gin and tonic. Not altogether surprisingly, neither the "Ping-Pong ball" nor the "giant iceberg" idea got off the drawing board.

The first really serious search for the *Titanic* was launched by Jack Grimm. A soft-spoken man with a halo of silver hair, Grimm has the money and the pluck to chase down anything that suits his fancy. His holdings include more than 400 oil wells, herds of cattle and buffalo, and real estate. Grimm's hunt for the *Titanic* got off to a good start when he teamed up with geologist William Ryan, who systematically reviewed historical documents, recomputed the *Titanic*'s probable location and came up with a realistic 600-square-mile target area. The first expedition sailed forth in the summer of 1980. For almost a month, the two men scoured the ocean floor, producing reams of sonar readouts with their new side-scan equipment. Examining the underwater silhouettes, they selected 14 targets likely to be the *Titanic*.

The second search took place the following July on a chartered Navy ship. By then, Grimm had received many proposals from naval architects outlining different ways to raise the *Titanic*. One top search priority was Target 13, which earlier had produced an image of something 800 to 900 feet long, 100 to 300 feet wide and 50 feet high. Cameras were dropped at that site, as well as at others. One video revealed a segment of a large object that Grimm insists is the *Titanic*'s propeller. "That's what Ballard's got—our Target 13," he says. "He's confirmed our target."

*Grimm gets to keep his gold ship*

After that expedition, Grimm wrote a book about his search, and to publicize it he ran a contest in a newspaper offering clues to readers for a treasure hunt. The prize was a 70-ounce, 14-karat gold model of the *Titanic* (pp. 56-57). When a team of three winners claimed the prize, they decided to split up an amount equal to its value ($25,000). "I got to keep the ship," Grimm says. He stashes it in a locked box.

In 1983, Grimm was "weathered out" on his third expedition by gale-force winds and after he backed off from the *Titanic*, Ballard and Jean-Louis Michel jumped in. Michel, 41, saw IFREMER's participation in last year's search as a way to bring glory to France for its impressive accomplishments in deep-sea technology. Ballard hoped that the new French side-scan sonar equipment would zero in on the shipwreck. As it turned out, the *Titanic* was discovered not by the advanced French sonar but by a new American video-and-sonar imaging system.

An extraordinary shroud of secrecy surrounded Woods Hole during the spring and summer of 1985. Although the chief sponsor of the American operation was the U.S. Navy, Ballard's spokesman, a high-powered Ontario media-entertainment lawyer named Mike Levine, imposed a complete news blackout. IFREMER thought it had an agreement with Ballard to release jointly any news resulting from their work at sea. But after the *Titanic* was located, arrangements were made to have a videotape airlifted off the research ship by helicopter. The tape was sold through a private entity in Canada called White Star to CBS-TV. Navy and Woods Hole officials were embarrassed; Michel was enraged.

Buoyed by the success of the expedition and apparently unfazed by the controversy, Ballard proceeded to lay plans for a return visit to the *Titanic* this summer. His intention is to take still and video pictures of the wreck's interior from the *Alvin* and to send a tethered camera-robot, nicknamed *Jason Jr.* for the *Jason* subsystem, inside. The expedition's official mission, according to Assistant Secretary of the Navy Melvyn R. Paisley, is "to test *Jason* subsystems . . . and to con-

*Titanic* survivor Ruth Blanchard vividly recalls night the ship went down, opposes plans to disturb it.

duct bilateral submersible rescue-operation tests." The BBC engaged in lengthy negotiations for the rights to film Ballard's *Titanic* work (it wanted, one spokesman said, "to walk right up the staircase of the grand ballrooom") but the talks broke down. Another British production company, TVS, will be on board the Woods Hole ship, *Atlantis II*, instead.

Jack Grimm suspects that Ballard's main aim may be personal as well as official business and he resents the fact that the government is picking up the tab. Earlier this year, he asked the Secretary of the Navy for permission to accompany Ballard on the *Atlantis II* in return for paying half the costs. He was turned down. Grimm is now planning a film expedition to the *Titanic* next year on the *Aluminaut*, a submarine developed by the Reynolds Aluminum Company. "As far as I'm concerned," he says, "if they get there first and do a film or recover some of the artifacts, I've lost the chance to recover my $2 million investment."

Jean-Louis Michel is scheduled to revisit the *Titanic* this summer with 40 scientists and crew members; funds permitting, in fact, he is supposed to arrange a rendezvous with Ballard. Michel's ship, the *Nadir*, carries a state-of-the-art submersible called the *Nautile*, which can accommodate three people and dive to 20,000 feet. Whereas the cameras used in the 1985 expedition could only take photos looking down, the *Nautile* is able to film the *Titanic* from the side. It also features a detachable, free-swimming robot—called *Robin*—which Michel plans to deploy at the site. The French scientist is not averse to gathering artifacts, but only if a museum would be prepared to conserve them properly.

The sale of photographs or film taken during the trip could pay some expenses for the *Nadir*, which Michel estimates at $11,000 a day. Overall, the costs of this year's expedition could surpass $1 million. "I seek neither personal recognition nor financial gain," Michel says earnestly. "Only recognition for France."

*Can lifting bags bring her up?*

Everything John Pierce does is for the British navy, or so he solemnly declares. "World War III will be fought underwater," he says. "My work on the *Titanic* will give the navy what it needs to raise damaged submarines." When pressed for an explanation of his relationship to the navy, Pierce, a civilian, hedges, "I'm an inside-outside man," he says.

The British navy has thus far not expressed an interest in Pierce's concept for raising the *Titanic* and Robert Ballard dismisses it as "ridiculous." But the intense, restless Welshman, who recovered the ship's bell of the *Lusitania* off the Irish coast four years ago, remains confident. "The *Titanic*," he states unequivocally, "is coming up."

Pierce's plan is to bolt "lifting bags" onto the hull using a submarine. "The bags hold 30 cubic meters," he explains. "They're 16-ounce nylon, and each bag will lift 500 tons. With the *Titanic* weighing 46,000 tons, it would take about 90 bags." At a command from Pierce, an ultrasound signal will be transmitted from the surface ship to activate seals on the bags, so that seawater is admitted onto a chemical inside. This will instantly produce huge quantities of hydrogen, the lightest element known to Man. The vessel will then be sufficiently buoyant to rise to the surface. "We're going to take her to the shipyards and refit her," Pierce says, "and begin regular runs from Southampton to New York."

Originally, Pierce hoped to photograph the *Titanic* this year, begin attaching bags in 1987 and complete the operation in 1988. IFREMER has offered him the use of the *Nadir* with its submersible and crew—for $2.6 million. So far, though, Pierce has been unable to interest an investor with that kind of money and consequently his plans have been set back a year.

Michel Jean-Pierre, a Belgian-born engineer with a New Orleans construction firm called Deep Sea Science and Exploration, doesn't want to raise the *Ti-*

*tanic*, but he does want to create a night to remember. Next April 15, on the 75th anniversary of the liner's sinking, he expects to be hosting a bash aboard a ship poised directly over the wreck. With him will be several celebrities, 40 paying guests who have signed up for a two-week cruise, and a number of scientists who want to find out what happened to the *Titanic*. There will be a moment of silence. A commemorative wreath will be dropped. But the highlight of the trip will be a series of descents to the *Titanic* in the *Aluminaut*, which Jean-Pierre's firm plans to lease.

The *Titanic* voyage is the first project of a new international travel group called the Exploration Society of America, whose founders include the 38-year-old Jean-Pierre and the noted Swiss oceanographer Jacques Piccard. Among the celebrities who have been invited aboard are several astronauts and actors Glenn Ford, Jacqueline Bisset, William Shatner and Loretta Swit. Most of those people, Jean-Pierre says, have expressed interest in their expenses-paid offer. "We're making it possible," he adds, "for anyone to see the *Titanic*, not just scientists." The price tag, for paying customers, is $25,000 per person.

Ruth Blanchard, an 86-year-old widow who lives in Santa Barbara, California, will definitely not be making the trip. As a 12-year-old girl, Mrs. Blanchard (née Becker) was a second-class passenger on the *Titanic*, along with her mother, sister and brother—all of whom survived the sinking. She vividly recalls witnessing the liner's final moments from a lifeboat. "It was a very dark night," she says. "The ocean was as calm as a millpond. The ship's lights were on and the prow went in first. The stern was upright for a moment or two. All of the people left on board started screaming, yelling, calling for help. I can still hear those screams. I will never forget them."

Mrs. Blanchard takes a dim view of the various schemes for disturbing the wreck. "It's the graveyard of 1,500 people," she says. "I believe they should be left in peace." Doubtless many others will agree. But as technology makes the *Titanic* ever more accessible, writes Walter Lord in *The Night Lives On*, his new companion work to *A Night to Remember*, "all that is left to protect her is a human sense of propriety— a fragile barrier that time and distance from the event will someday break."

In her terrible last moments, as depicted by artist Ken Marschall in 1972 painting, the *Titanic* dips bow into the frigid waters of the North Atlantic and plunges to her doom while horrified survivors look on.

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*By Stanley Meisler*

# Vienna's anguished artists presaged the brilliant city's fate

*As the old Hapsburg order disintegrated and anti-Semitism grew, Klimt, Schiele and Kokoschka gave form to their foreboding*

Historisches Museum der Stadt Wien, Vienna

At the turn of this century, when a great empire was dying, Vienna, the grand capital of that empire, witnessed an outburst of creativity so rare that one must think back to Renaissance Florence or ancient Athens to find moments in history that surpassed it in variety and influence and beauty. In literature and music, in art and architecture, in science and politics, in cinema and design, Vienna set a pattern and a pace for modernity in our century. Yet the rest of the world, content with images of fancy-uniformed Hapsburgs and lighthearted operettas and lilting Strauss waltzes and warm coffeehouses, does not always think of imperial Vienna as a center of extraordinary creative activity.

Of course, it is no secret that Sigmund Freud transformed the awareness and way of thinking of Western society, that Gustav Mahler and Arnold Schoenberg loom as two giants of 19th- and 20th-century music, that Arthur Schnitzler was one of the most popular writers in the German language for many decades, that Gustav Klimt and Egon Schiele and Oskar Kokoschka were powerful painters of sensitivity and anguish, that Adolf Loos influenced the path of modern architecture, that Ludwig Wittgenstein revolutionized the study of philosophy, that Erich von Stroheim and Fritz Lang helped pioneer the transformation of cinema into art, that journalist Theodor Herzl turned Zionism into a mass movement. But even admirers of these men do not often realize that all of them came from the same time and the same place—fin de siècle Vienna.

Various governments and institutions have joined recently to try to set imperial Vienna in its true and wondrous place. The Historical Museum of the City of Vienna opened a six-month exhibition in March 1985 describing the ferment and achievements in art, architecture, music, design, literature, theater, cinema, politics, science and philosophy in Vienna from 1870 to 1930. The exhibition moved to Paris in February of this year with even larger scope. The Georges Pompidou National Center of Art and Culture (SMITHSONIAN, August 1977) asked Princeton University historian Carl E. Schorske to serve as consultant and expanded the period of study to 1938. That was the year Adolf Hitler annexed Austria, paraded into Vienna and put a brutal end to its already dying creativity. A shortened version of the exhibition opened last month at New York's Museum of Modern Art (MOMA). Entitled "Vienna 1900: Art, Architecture & Design," it will be on view there until October 21.

To the disappointment of historians like Schorske, MOMA, befitting its title and mandate, has chosen to

Turn-of-the-century coffeehouses like the Griensteidl were nerve centers for city's artists and intellectuals.

Private collection

Egon Schiele's *Autumn Sun (Sunrise)*, painted in 1912, was escape for artist from raw, powerful portraits. Almost half of his completed oils are city views and landscapes, which echo the intensity of Van Gogh.

concentrate on the artists, architects and designers of Vienna. For the museum, in fact, the arrival of 20 oil paintings by Klimt and 20 drawings by Schiele is a major artistic event. The Austrian government has always been reluctant to allow the departure of the works of Klimt. His masterpiece, *The Kiss* (p. 80), will be leaving Austria for the first time to hang at MOMA. Many Americans have never seen his famous portraits of powerful, sensual women adorned in gold and geometric symbols. But Klimt and his colleagues cannot be understood without putting them in their epoch. History, though kept in the background, will still infuse the show.

In the last half of the 19th century, the Austro-Hungarian Empire of Emperor Franz Josef was regarded as one of the great powers of Europe. The authoritarian Hapsburg Dynasty had ruled longer than any other in Europe, and extended over all of present-day Austria,

Hungary and Czechoslovakia and large tracts of Yugoslavia, Poland, Rumania, Russia and Italy. But the empire, unable to hold under the tensions of defeat and nationalism, would finally crumble in World War I. In 1910, Franz Josef was the ruler of 51 million people, but only 12 million—less than a quarter—were, like himself, of German nationality. The rest were Hungarians, Czechs, Poles, Ruthenians, Rumanians, Croats, Serbs, Slovaks, Slovenes and Italians all demanding self-rule. "The Habsburg Monarchy," British historian A. J. P. Taylor has written, "was a geographic nonsense, explicable only by dynastic graspings and the accidents of centuries of history."

Vienna, the imperial capital, ignored the rot of the empire. "On the surface," Edward Crankshaw wrote in his book *The Fall of the House of Habsburg*, "this beautiful city had never seemed more vital than when it was dying." Vienna, transformed by an urban-renewal program even more massive and monumental than that of Napoleon III in Paris, was the creative center of central and eastern Europe. The Vienna writer Hermann Broch called this era of grandness at a time of impending doom "the joyous apocalypse."

*An atmosphere that continued to draw artists*

The city of Mozart, Haydn, Beethoven, Schubert and Brahms, Vienna had long been renowned as a mecca for musicians, and it is not surprising that the atmosphere in Austria should continue to attract a Mahler to conduct and compose there during this period of political decline or encourage a Schoenberg to break new musical ground. But it is far more difficult to try to explain the forces behind so much creativity in other arts at the same time.

The outburst came out of the power and later the disquiet of the new upper middle class of Vienna. The patronage of culture was one way for the bourgeoisie in the Hapsburg Empire to acquire the status of the old aristocracy. The well-to-do Viennese attended opera and theater often, encouraged their children to play the piano or paint, and supported the government's commitment to culture. This bourgeois obsession with culture became more intense in the first shatterings of political illusions of a liberal culture. When the anti-Semitic Karl Lueger was elected mayor and took office just before 1900, for example, many sensitive Viennese of the upper middle class responded by turning their backs on politics. "By the 1890s," Schorske has written, "the heroes of the upper middle class were no longer political leaders, but actors, artists, and critics."

The artists, many of them coming out of that upper middle class, though often rebelling against it, felt the same mood as everyone else and began to peer inward. They became, as Schorske puts it, "preoccupied with

One of Schiele's calmest works, *The Family*, 1918, depicts himself, his wife and their anticipated baby.

Historisches Museum der Stadt Wien, Vienna

In *Self-Portrait with Spread Fingers*, Schiele offers a frank and uncompromising stance to the world.

Osterreichische Galerie, Vienna

*Death and the Maiden* was Schiele's symbolic farewell to model Walli when he wed Edith Harms in 1915.

Museum of Modern Art, New York

Oskar Kokoschka's poster advertised *Murderer, Hope of Women*, a stark, bloody play he staged in 1909.

the problem of the nature of the individual in a disintegrating society." Schnitzler was the chronicler of this inner tension at a time of outward rot; Freud became the prophet. This obsession with the self nurtured the creativity of Vienna.

The artists and intellectuals of Vienna did not work in isolation but knew each other. The relationships could be professional, personal, casual or profound, but they were meaningful enough to reinforce ideas. Everyone in Vienna seemed to know what everyone else was up to. A spell of impotence prompted Mahler to consult Freud. Freud wrote an admiring letter to the playwright and novelist Schnitzler as a birthday favor from Schnitzler's fans. Gustav Klimt chased in vain after the 18-year-old Alma Schindler before her marriage to Mahler. After the death of Mahler, Alma became the wife of writer Franz Werfel and the mistress of painter Oskar Kokoschka. Kokoschka did portraits of Alma, the architect Adolf Loos, and the poet and critic Karl Kraus. Arnold Schoenberg, who tried his hand at more than music, painted the burial scene of his mentor Mahler. Mahler's tomb was designed by the architect Josef Hoffmann. Klimt, who was a friend of both Mahlers, founded the Secession art movement with Hoffmann and others.

### *Coffeehouses, newspapers, constant conversation*

"It was sweet to live here in this atmosphere of spiritual conciliation," the novelist and biographer Stefan Zweig wrote in his memoirs about his youth near the turn of the century, "and subconsciously every citizen became supernational, cosmopolitan, a citizen of the world." Zweig found a key to the understanding of old Vienna in its coffeehouses, where one could remain all day for the price of a cup of coffee and read all Europe's newspapers and magazines and talk with friends. "Perhaps nothing has contributed so much to the intellectual mobility and the international orientation of the Austrian," Zweig wrote, "as that he could keep abreast of all world events in the coffeehouse and at the same time discuss them in the circle of his friends."

Some were torn about staying. Anguished by lack of promotion in his early years and hemmed in by anti-Semitism, Sigmund Freud maintained throughout his life that he hated Vienna. ("This is no atmosphere in which to maintain the hope of achieving anything difficult," he wrote in 1898.) Yet he remained until 1939, the year after Hitler's troops marched in.

As the imperial capital, Vienna attracted people from all over the empire. It was the place for a young Hungarian, for example, especially if he were German-speaking, to seek fame and fortune. Jews found the attraction even more compelling. Unlike the neighboring Russian Empire, the Austro-Hungarian Empire

refrained from pogroms, leaving its Jews in relative peace. Jews, who were living in every dominion, could not identify with the various national movements that were trying to break away from the empire. Instead, most of them believed their future was tied to the empire, and they looked on the Emperor as a protector and the city of Vienna as the natural goal of their assimilation. By the turn of the century, Jews made up perhaps ten percent of the population of Vienna and a larger percentage of its upper middle class.

Many of the artists and intellectuals of Vienna reflected this Jewish background. Freud, playwright Arthur Schnitzler, critic Karl Kraus, philosopher Ludwig Wittgenstein, writer Stefan Zweig, and composers Arnold Schoenberg and Gustav Mahler came from Jewish or partly Jewish families. (Mahler converted to Catholicism just before taking over as director of the Vienna Court Opera. The Emperor would not have allowed a Jew to take the position.) The presence and influence of the Jews in Vienna served as a familiar scapegoat for the anti-Semitic, mass political movements trying to break the power of the upper middle class. After witnessing the electoral victory in Vienna of the anti-Semitic Mayor Karl Lueger, journalist Theodor Herzl, an assimilated Budapest-born Jew who had covered the trial for trumped-up charges against Alfred Dreyfus in France, founded his Zionist movement to create a Jewish national homeland in Israel. Adolf Hitler, a young down-and-out would-be artist and architect, who painted watercolors of the city (six were on exhibit in the Paris show) while living in Vienna from 1908 to 1913, learned to admire Lueger and his anti-Semitism.

To help understand the artistic dynamics of old Vienna better, Carl Schorske, an American, and the Vienna-born American psychologist Bruno Bettelheim have come up with two very different yet very apt metaphors. In his book, *Fin-de-Siècle Vienna,* Schorske uses the image of the construction of the enormous Ringstrasse—the name given both to the boulevard and the buildings on it—to explain what happened in Vienna. In the late 1860s and the 1870s, the liberals of the upper middle class—at this time the new establishment of Vienna—began erecting a series of monumental structures, like the Opera, the Parliament, the University and the City Hall, and of substantial Baroque-style apartment houses along this new boulevard, which ringed the old center of the city. "The liberal rulers," wrote Schorske, "tried to design their way into a history, a pedigree, with grandiose buildings inspired by a Gothic, Renaissance, or Baroque past that was not their own." This architecture still defines the look of Vienna today.

*The author, Paris correspondent for the* Los Angeles Times, *has also contributed to the pages of* Atlantic, The Nation *and* Foreign Affairs.

Wolfgang Gurlitt Museum

In *Portrait of an Old Man,* Kokoschka exaggerated external features to suggest the sitter's internal state.

The Ringstrasse became the symbol of this period of upper-middle-class, culturally liberal dominance of the city. The word Ringstrasse, Schorske tells us, conjures up an era for Austrians much as the word Victorian does for the English and the term Second Empire for the French. The first stirrings of modern art in Vienna came from the generation of artists that included Klimt and architect Otto Wagner, who took part in the construction and design of the Ringstrasse and then broke away from all that it symbolized.

Bruno Bettelheim, who fled Vienna in 1939, invoked the image of Mayerling as his metaphor. On the night of January 29, 1889, Crown Prince Rudolf, the 30-year-old unstable philanderer who was heir to the throne, shot and killed his 17-year-old mistress, Marie von Vetsera, and then killed himself, in the bedroom of his hunting lodge at Mayerling in the Wienerwald, the Vienna Woods. It was a double-suicide pact. The girl meant little to Rudolf. He simply felt the need, according to Bettelheim, of the presence of a sexual partner in order to kill himself. His mother, Elisabeth, the beautiful and willful Empress who never spent much time with either her husband Franz Josef or her son, revealed the truth about the Crown Prince's suicide to the Emperor. News of the deaths leaked out, and the Mayerling affair became one of the most sensational

Silver tea service by Wiener Werkstätte founder Josef Hoffmann was both simple and sophisticated in design.

Kolo Moser, colleague of Hoffmann, sought clarity and unpretentiousness in writing desk, other furniture.

and romantic tales of 19th- and 20th-century Europe.

For Bettelheim, the affair symbolizes what was the obsession of Vienna at the turn of the century: "The strange and deep link of sex and destruction was to mark Viennese culture during this period of the slow decadence of the empire," Bettelheim wrote in the Pompidou Center's exhibition catalog. "This interconnection, publicly demonstrated at Mayerling, formed for a long time the essential underlying theme of the art, the literature and the psychoanalysis of Vienna." Bettelheim cites a good deal of evidence: the predominant place of these themes in the psychoanalysis of Freud; plays and novels by the medically trained Schnitzler about sexual involvements that inevitably lead to suicide and murder; the Eighth Symphony of Mahler, set in part to a scene of Faust finding salvation in death through the love of a woman; the numerous paintings of Klimt that juxtapose eroticism and signs of death. Bettelheim helps clarify all that happened to Viennese culture. At a time when their empire was dying, the artists and intellectuals of Vienna looked inward; what they found, he says, were the forces of sex and destruction.

The work of Gustav Klimt reflects both the rebellion against the Ringstrasse and the obsessive themes of the Mayerling affair. As a young, promising artist, Klimt received commissions between 1885 and 1891 to paint historical and allegorical murals for the Museum of Art History and the Burgtheater, two of the monumental buildings that were going up on the Ringstrasse. His reputation grew enormously. But a streak of rebelliousness, which Vienna did not notice at first, grew as well. In 1897, when he was 35 and probably Vienna's best-known painter, he founded the Secession movement. This coterie of painters, architects and designers mocked the Ringstrasse of their fathers and its imitation of ancient and medieval architecture, searching instead for modern ideas like the Art Nouveau style fashionable elsewhere in Europe, and proclaiming art a refuge from modern pressures.

*An emperor who supported the rebels*

The upper middle class could accept so mild a rebellion. The government of Emperor Franz Josef, proud of its modernity in the arts, even supported the Secession financially. Klimt still received commissions from the establishment. But after the turn of the century, he provoked a fury in Vienna when he painted three allegorical panels of medicine, philosophy and law for the University of Vienna. The professors could neither tolerate Klimt's sensual and anguished bodies nor his questioning of the value of the university's disciplines. Right-wing politicians took up their cause. The government refused to allow the Academy of Fine Arts to

appoint Klimt as professor. The experience seared Klimt, who told an art critic, "I want to get out of all these unrefreshing absurdities that hinder my work and get back to freedom. I refuse all state help. I renounce everything." Enraged, he bought back his university paintings and turned even more inward, exploring the themes of desire and deprivation. He used the form of the sexually destructive female—her eroticism cloaked, layered and ultimately kept untouchable by a glittering surface of elaborate gold patterning.

*A mixture of eroticism and death imagery*

Klimt, a burly, handsome, bearded man often photographed in his studio wearing a caftan, can still shock us almost a century later. His *Judith I* (1901), coiffed like a Viennese society matron, her neck choked in gold, flaunts both sexual satisfaction and anguish, her eyes lidded dreamily, her mouth parted, as she makes her way from the sleeping chamber, clutching the head of Holofernes (p. 81). This mix of eroticism and death imagery runs through many of his canvases. The pregnant woman with downcast eyes in *Hope II* (p. 78) is confronted with a skull that rests on her distended abdomen, while in her garment below, apparitions of sorrowful women echo the weight of her anxiety. Klimt could be playful. He displayed the bottom of a woman prominently in his *Goldfish* (1901-02) and had to be dissuaded by friends from titling the painting *To My Critics*.

In his later years, Klimt became a much sought-after portrait painter. Many of these portraits combined naturalistic studies of the power and sensuality of the model's face with the most implausible dress and ornamentation. John Russell, art critic of the *New York Times*, has described one work of this genre, Klimt's portrait of the dress-shop owner Emilie Flöge, with her haughty, powerful beauty, as a "masterpiece of delicate insight." Flöge was Klimt's mistress for the last two decades of his life. When he was carried home with a stroke in 1918, he called out "Get Emilie here," and died in her presence.

It has always been difficult for Americans to see and understand the work of Klimt. Some of his paintings, including the controversial allegories that infuriated the University of Vienna, were destroyed in a fire started by the Nazis during World War II. Fearing damage during travel, Austrian museum curators at first refused to loan *The Kiss* (1907-08) to the New York show. In fact, the Paris and New York exhibitions were almost canceled when Austria insisted at first on holding back a few other Klimts. It took a personal plea from President François Mitterrand of France to President Rudolf Kirchschlaeger of Austria.

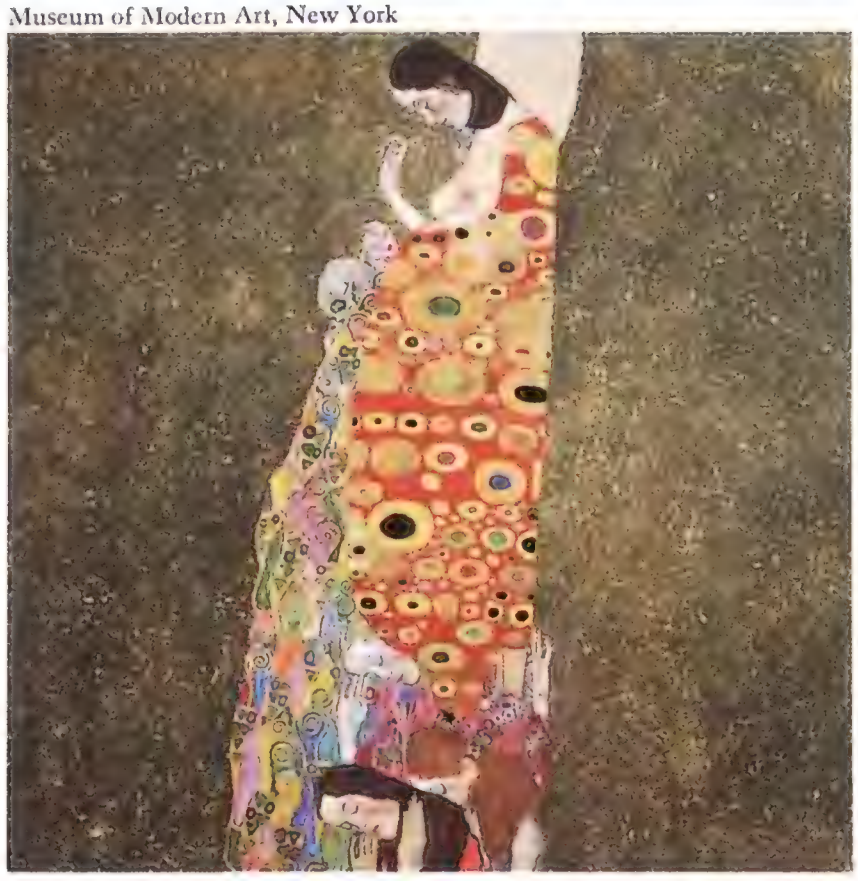
Klimt discovered Egon Schiele as a young, unhappy teenage student at the Academy of Fine Arts and exhibited his work at a showing of new art that he and his friends organized. Schiele looked on Klimt as a kind of mentor, yet he represented a new generation that was breaking away. Although the young artist took some of Klimt's sexual themes and extended them, he explored the complexities of reality not with heavy symbolic overlays but rather with unremitting reduction to raw essential.

Schiele led a troubled life, living off friends while painting, striving for an aimless iconoclasm, and serving almost a month in jail when he was 21 for the charge of seducing a young girl. His *Self-Portrait with Spread Fingers* (p. 73), completed in 1911, the year before he was imprisoned, reveals his response to the world: intense, defiant, divided. Most of his works are marked by torment and sexual tension. By 1914, he was working in near seclusion, frequently sketching and painting his model and companion, Walli. But he fell

Historisches Museum der Stadt Wien, Vienna

Karlsplatz Station was part of 40-station rail network for Vienna, designed by architect Otto Wagner.

Museum of Modern Art, New York



Gustav Klimt's *Hope II* hits at life's deepest joys and fears, as pregnant woman is haunted with worries.

in love with Edith Harms, an innocent woman who lived near his studio, and proposed marriage. Edith's parents were shaken by his unconventionality but agreed nevertheless. As a symbolic farewell to Walli, Schiele painted *Death and the Maiden* in 1915, a self-portrait allegory which he hung over his bed. That same year he married Edith, and critics detected a gradual calming in his work, culminating in a striking canvas of himself, his wife and their expected child as *The Family*. But the scene was not to be. In a tragic turn of events that calls to mind Klimt's *Hope II* (above), painted a decade before, Edith died of Spanish influenza in 1918 while still pregnant, and Schiele died of the same illness three days later at the age of 28. Klimt, Schiele and the Austro-Hungarian Empire all died in the same year.

Oskar Kokoschka, four years older than Schiele, represents a true break with the Secessionists and Klimt. The paintings and plays of the young artist made him the enfant terrible of his generation; they brimmed with a wild frenzy that frightened others. After seeing some of them in an exhibition in 1911, an incensed Archduke Franz Ferdinand, whose assassination later triggered World War I, said, "This man deserves to have every bone in his body broken."

Like Schiele, Kokoschka refused to mimic Klimt, whom he revered. In seeking a new reality, Kokoschka seemed to take a psychological step even beyond Schiele, putting his subjects through a kind of Freudian psychoanalysis on canvas. Grating the nerves of viewers, he laid raw secrets bare, especially in portraits (p. 75). His imagery was brutal, as in the poster connected with his own drama, *Murderer, Hope of Women* (p. 74), which premiered at the Kuntschau in 1909.

During his Vienna years, Kokoschka, obsessed with love for Alma Mahler, painted the two of them lying together in the eye of a storm in *The Tempest* (1914). Before painting the work, he wrote a letter to Alma describing the images in his mind: "We two, expressing a great calm force, our hands clasped, along a semicircle with a sea shining with colors, a water tower, mountains, lightning, and the moon." Yet in the finished work, she sleeps contentedly while his body is rigid and he stares into space. Their love did not last long after that, and Alma left him for the German architect Walter Gropius. Kokoschka, like many others, left the city before the end of World War I. He made an international reputation as an Expressionist artist elsewhere in Europe, eventually settling in Switzerland, where he died only six years ago.

These developments in painting had their parallels in other arts in Vienna, most obviously in architecture and design. Otto Wagner, like Klimt, worked on the Ringstrasse and then turned his back on its attempt to evoke a classical past with monumental architecture. For the Wiener Stadtbahn, the extensive railway network he designed for the city, which included 40 stations, Wagner combined classical elements with the cleaner lines of the Jugendstil style and innovative use of iron and glass. A younger architect, Josef Hoffmann, a pillar of the Secession, joined designer Kolo Moser in founding the Wiener Werkstätte, an arts-and-crafts cooperative that created stylish furniture, silverware, glassware, cloth and even postage stamps. Architect Adolf Loos preached the strictest use of materials in a no-frills architecture. "The work of art is the private affair of the artist," he said. "The house is not."

*A demand that walls be left bare*

Loos insisted that architecture and, in fact, furniture should provide comfort and not project the personality of the architect and the designer. He did not want a new style, he wanted *no* style. Loos became harsh in his attacks on ornamentation, demanding that walls be left bare. "All art is erotic," he wrote. "The man of our own times who from an inner compulsion smears walls with erotic symbols is a criminal or a degenerate." Loos, now regarded as a pioneer of modern European architecture, entered a contest in 1922 for the design of the Chicago Tribune Tower. He submitted plans for an enormous column topped by a Doric capital, but lost.

After World War I, Vienna suddenly found itself the capital of a small republic instead of an empire. The

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philistinism and anti-Semitism of some of the mass political movements intensified. Some artists began to look elsewhere for a more sympathetic intellectual climate and for opportunities. The exodus swelled in the 1930s with the growth of fascism and turned into an outpouring when Hitler paraded into Vienna and gloated over his grasp of a great city that had once spurned him. The list of exiles is impressive. Even before the war, film director Erich von Stroheim and philosopher Ludwig Wittgenstein had left. In the early waves, Vienna lost film director Fritz Lang, architect Richard Neutra, engineer Ferdinand Porsche, composer Arnold Schoenberg, economist Joseph Schumpeter and others. With the Anschluss of 1938, the rest fled, including Sigmund Freud, psychoanalyst Wilhelm Reich, novelists Robert Musil, Franz Werfel and Stefan Zweig, and philosopher Karl Popper.

The Paris exhibit, in its final room, described the

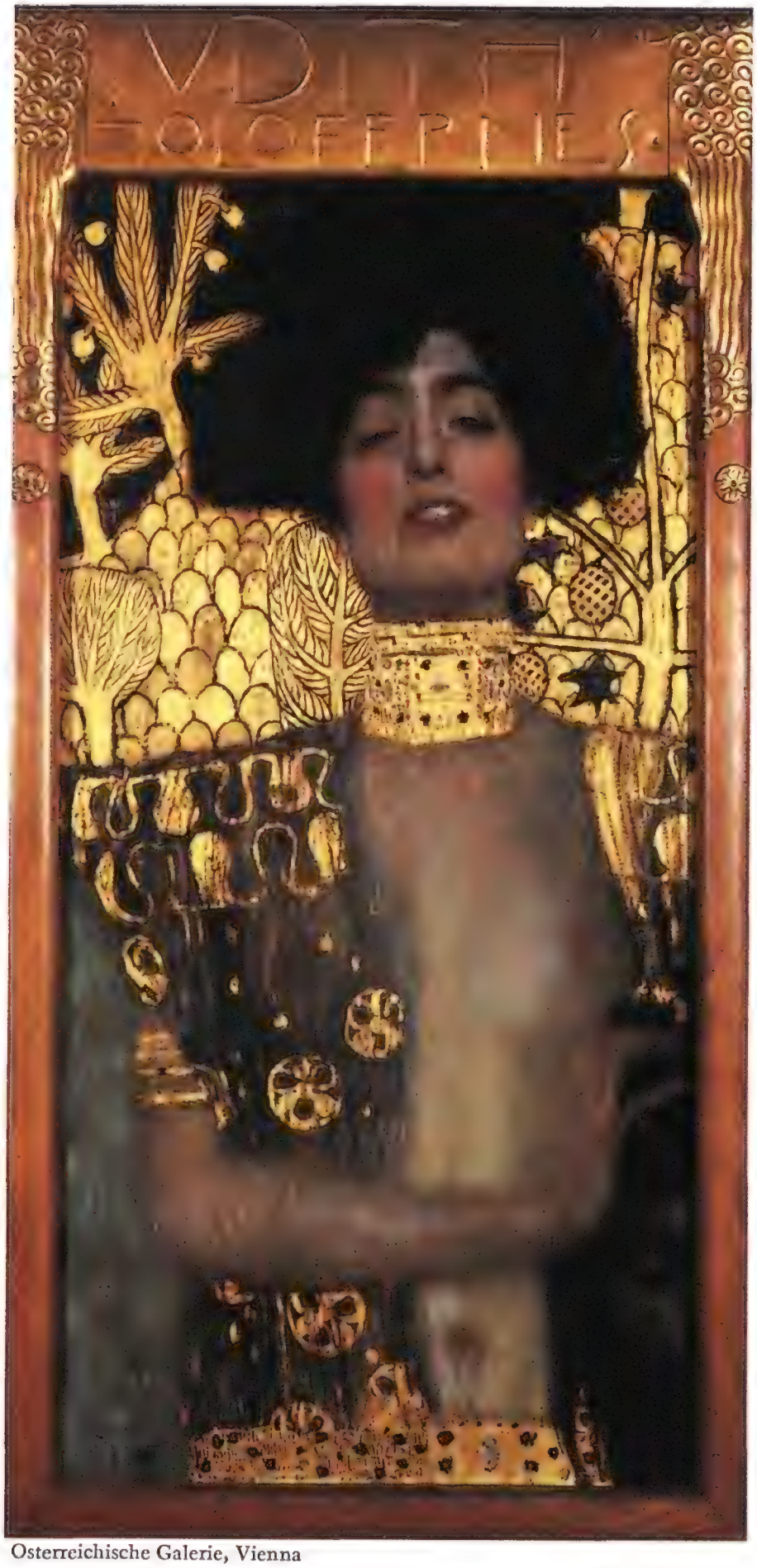
*The Kiss*, painted by Klimt in 1907-08, is powerful rendering of the concept of hope and love fulfilled.

The Austrian government has let this painting leave its homeland for the first time to hang in MOMA show.

Osterreichische Galerie, Vienna

exodus in a simple, affecting audiovisual display. With a recording of Vienna waltzes playing in the background, one screen showed a famous picture of Hitler entering Vienna in an open car. While this slide gradually increased in size, a second screen flashed photographs of the many exiles, one after another. After the last exile disappeared, both screens overwhelmed the room with huge pictures of Hitler in Vienna, and the music stopped.

In his sensual *Judith I*, Klimt portrays seductive temptress sheathed in gold carrying Holofernes' head.



Osterreichische Galerie, Vienna

With jeweled neck collar and encrusted dress, Emilie Flöge, Klimt's longtime mistress, confronts the viewer.

Historisches Museum der Stadt Wien, Vienna

*By Wesley Marx*

# Life at the bottom makes the sturgeon a tough customer

*This great living fossil has endured pollution, dams, overfishing and much loss of habitat, but now aquaculture is coming to the rescue*

It is a breezy winter morning on San Francisco Bay and Abe Cuanang, 33, is angling in the shadow of the Golden Gate Bridge for an odd-looking fish that could be worth upwards of $2,000. That's what a large female sturgeon's eggs will fetch these days after they've been processed into caviar. But Cuanang is not after a caviar hit. He's unwilling to risk a year in jail and a $10,000 fine, which is the penalty for selling a sturgeon caught in California. "Any fish I catch aren't for me," he explains with a smile. "They're for the head sturgeon surgeon."

The head sturgeon surgeon is Dr. Serge Doroshov, a Soviet émigré who teaches animal science at the University of California, Davis. Once a top Russian aquaculture researcher, Doroshov, 47, has been propagating sturgeon artificially at the Davis campus since 1979. His aim is to help restore a fascinating and potentially lucrative fishery that has been foundering in deep trouble for years. During the white sturgeon's annual spawning run between San Francisco Bay and the Sacramento River, he hires commercial fishermen like Cuanang to capture the wild breeding stock upon which his hatchery program depends.

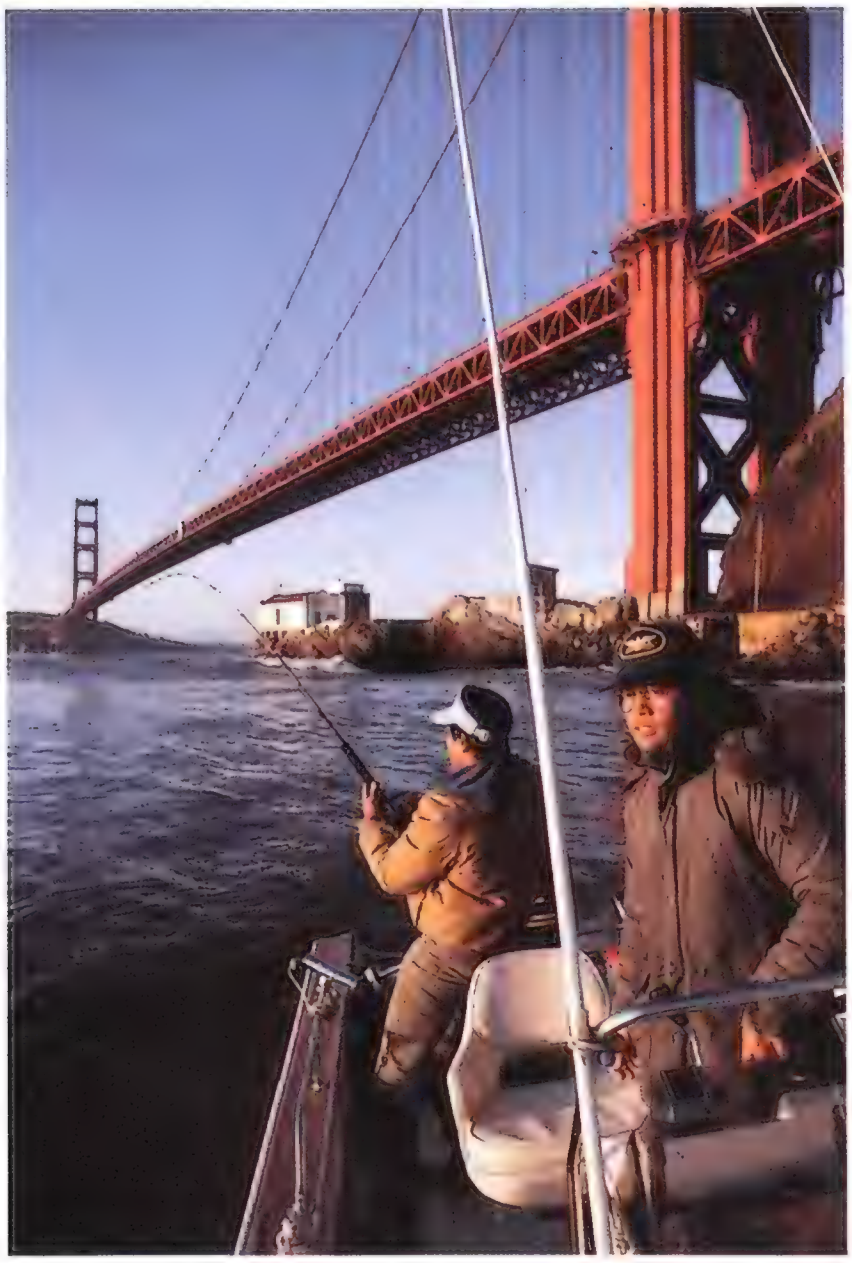
A century or so ago, the processing of caviar was a booming business in California, in the Great Lakes region and on the Eastern seaboard, but greed and waste almost killed off American stocks of the fish that produce the shiny black eggs. Today this notoriously expensive delicacy—a restaurant customer may pay $50 to $60 for an ounce or two offered with toast points—is more popular than ever before. Most of the true caviar consumed in this country comes from the sturgeon of the Caspian Sea, although a lot of roe from salmon, whitefish and domestic paddlefish is also marketed as "caviar." The skyrocketing demand far outstrips the existing supply; efforts are now under way here not only to replenish natural sturgeon populations but to establish breeding programs on commercial "farms" as well. Doroshov's pioneering research is at the cutting edge of this work.

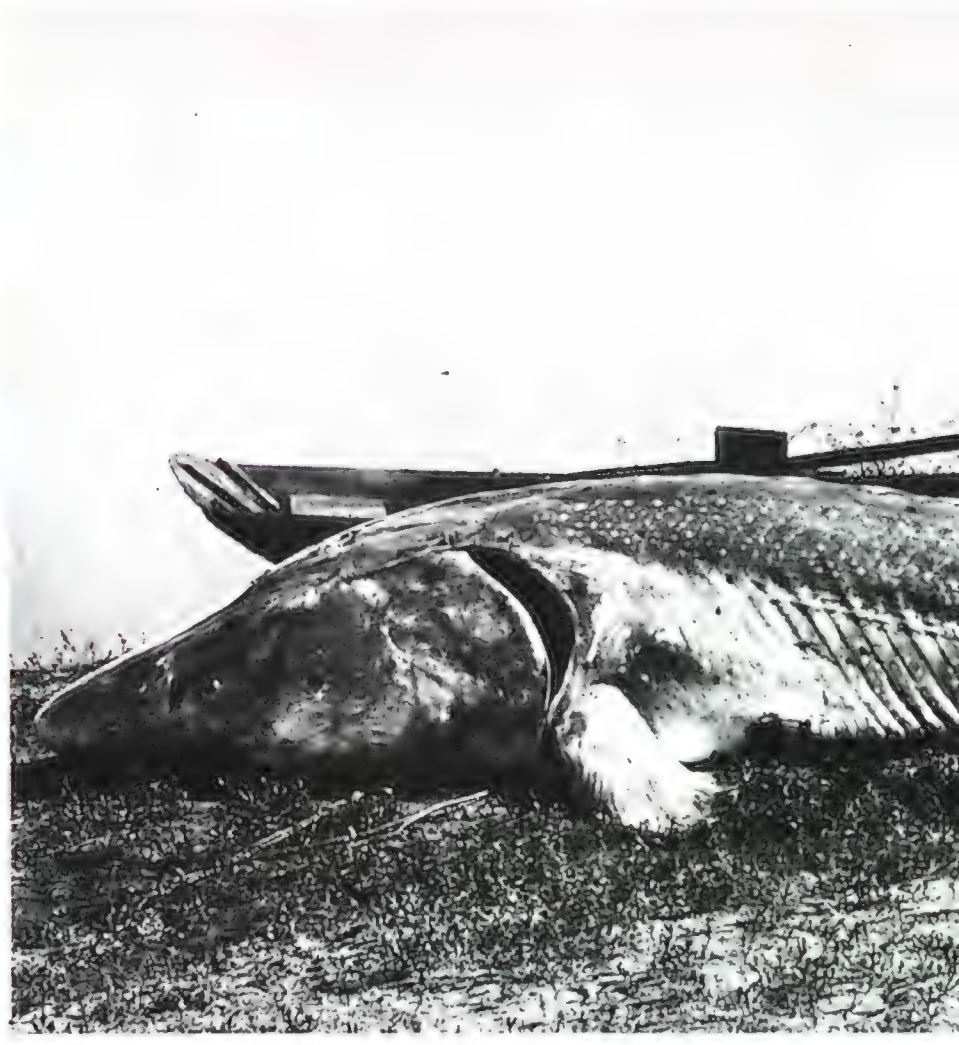
Raw fish eggs are not everyone's cup of tea, of course. Indeed, some people have always found it impossible to understand why so many others go crazy over the stuff. "There is an Italian sauce called *caviaro*," sniffed a 17th-century savant named Tobias Venner, adding disdainfully that "it is good to beware of it." By that time caviar was regarded in England as a luxury item that was much too subtle and refined to be appreciated by the common man. ". . . the play, I remember, pleased not the million; 'twas caviare to the general," Shakespeare wrote in *Hamlet*. He might just as well have observed that 'twas caviar to the king. Henry I is supposed to have banned the consumption of sturgeon at any table save his own.

While its association with royalty, millionaires, champagne and the good life helps account for caviar's continuing appeal, there is more to it than mere snobbery. The romance of caviar derives in part from its mysterious origins within the armored colossus that Longfellow celebrated in "The Song of Hiawatha" as "the monster Mishe-Nahma." Taste and texture have something to do with it, too; excellent caviar gleams like pearls, is neither too oily nor too salty, rolls sensuously upon the tongue and tastes, as one enthusiast puts it, "like a smooth sea breeze."

Captive-reared white sturgeon uses "whiskers" under snout to search for food. Species is prized for caviar.

*Photographs by Terry Domico/Earth Images*





A man appears dwarfed by a 1,500-pound sturgeon caught years ago in Idaho's Snake River near Payette.

Fisherman Abe Cuanang fights sturgeon near Golden Gate Bridge while his brother, Angelo, stands by.

In a suitably respectful eatery, caviar is not served, it is presented. The waiter may bring it to your table heaped in a glistening silver *presentoir*. Or, you may be permitted to serve yourself, buffet-style, from a spectacular display offering several American and imported varieties, together with bottles of Russian vodka. Beaudry's Restaurant in the Westin Bonaventure Hotel in Los Angeles is one of a growing number of establishments all over the country that cater to this extravagant craving. There, chef Christian Redouin uses a chain saw to sculpt likenesses of the sturgeon out of ice as a setting for his caviar. "It should be presented in an elegant manner," he explains (p. 93).

Once served, you may carefully tap the precious eggs directly onto your tongue with gold-tipped palettes, or you may trowel them onto wafer-thin crackers. You may risk incurring the wrath of purists by disguising the flavor with sour cream and chopped onion, or you may simply ask for a lemon—or you may take it straight. Whichever, you do not merely eat caviar; you savor it. Therein lies the source of its mystique.

The creatures that supply this curious comestible are among the largest fish in the world. A white sturgeon caught on the Columbia River years ago weighed 1,285 pounds; the old-time fishermen used plow horses to haul such behemoths ashore. Russia's beluga is even more impressive. One record catch reportedly measured 28 feet in length.

The sturgeon that run in San Francisco Bay don't get much over 400 pounds, but even at that they're heavier than the 16-foot power skiff Abe Cuanang uses to catch them. "The bigger ones can tow your boat around like a sled," he admits. "It can get pretty hairy if they pull you across the bow of a passing tanker." Cuanang fishes with a composite graphite-and-fiberglass rod and a conventional casting reel containing 350 yards of 50-pound-test line. He uses a heavy, unbaited treble hook, which he casts over a rocky bottom in about 30 feet of water. In the winter, herring enter San Francisco Bay by the millions to spawn and the sturgeon, in turn, bunch together like so many head of cattle to suck up the herring eggs. Cuanang reels in his hook slowly so that it drags across the bottom. The idea is to snag one of the feeding fish in the tail or body.

Sometimes it actually works. Cuanang's rod suddenly bends and surges. "I've got one on!" he exclaims. A large, greenish body bolts out of the water, arcs through the air and lands with a tremendous splash.

*Californian Wesley Marx has written previously for* SMITHSONIAN *about the renaissance of commercial sail, pleasure piers and common carp.*

The fish were harvested with nets, spears, traps, lines of hooks. Horses were used to pull big ones ashore.

Serge Doroshov checks red-topped feeding apparatus on tanks at University of California's Davis campus.

Cuanang reels in rapidly, pulls the rod back, reels in some more. The sturgeon continues to jump like a marlin or a sailfish. Onshore, some bird watchers gesticulate at the splashes; a crew member on the deck of a passing freighter points excitedly. After a 20-minute struggle, an exhausted, seven-foot-long sturgeon is floating next to the boat. Cuanang ties a noose around the tail, releases the hook and leaves the fish in the water. "I don't bring up a sturgeon that big," he says. "It could thrash the boat apart."

Sturgeon and their ancestors have been thrashing around for about two million years now—much longer than such "modern" fish as tuna and salmon. Like another living fossil, the shark, the sturgeon has cartilage rather than bones. Instead of scales, it has five rows of spiny plates called scutes (pronounced "scoots") extending down the length of its body. With these stud-like serrations and its long snout, the sturgeon exudes a decidedly crocodilian aura but, in fact, it's about as harmless as a fish can be. Its mouth is wide but toothless and rimmed with protruding lips which suck up clams, mussels, flatfish, worms and other bottom-dwelling creatures, plus about anything else that fits. One Columbia River sturgeon had a half-bushel of onions in his gut when he was caught. A domestic cat was found in the stomach of another large fish and in 1927 an Iron Cross turned up in a sturgeon that was taken out of Germany's Rhine River. (The medal belonged to a despondent war veteran who had thrown himself into the river and drowned.) Relying mainly on taste and smell as they root their way through muddy bottom waters, the fish use the four whisker-like barbels that hang underneath their snouts to detect food in the muck.

Worldwide, there are 23 species of sturgeon, all of them confined to the Northern Hemisphere. North America has eight including the white, green, Atlantic, lake and shovelnose. Some sturgeon are anadromous, which means that they spend the bulk of their time in marine waters and swim up rivers to spawn. Other species, including the lake, the pallid and the shovelnose, are strictly freshwater fish; they, too, ascend rivers to spawn.

Sturgeon are long-lived creatures—one caught in Lake of the Woods near Ontario was estimated to be about 150 years old—and the females are correspondingly slow to mature. White sturgeon, for example, do not spawn until they are 15 to 25 years old; thereafter, their egg-producing capacity increases dramatically with age. A 50-year-old fish may carry four million eggs—but she might spawn only once every two or three years.

*The fish that gives us caviar*

Doroshov's graduate assistants at Davis make incision in 30-pound fish for tests used in maturation study.

Commercial producer Tony Vaught examines large sturgeon at Arrowhead Fisheries in Gerber, California.

When a female is ready to extrude her eggs, the males cluster around to fertilize them as soon as they come out. The eggs then sink to the bottom, where they adhere to rocks, clay and sunken logs. Carp, suckers, bass and even other sturgeon often converge to feed on them. In about ten days, the fry hatch. These tiny, tadpole-like creatures subsist on their egg-yolk sac at first and then move on to aquatic insects. By the time they are 20 days old, they have taken on the physical appearance of their parents and begin to feed on the bottom. Less than one percent of the fry survive past one year.

In historic times, sturgeon occupied the farthest reaches of their natural range in numbers that are all but unimaginable today. A visitor to the British colony of Massachusetts in 1675 found the fish to be "in great plenty and in some rivers so numerous that it is hazardous for canoes and the like small vessels to pass to and again." In the mid-1800s, fishermen in Oregon actually complained that sturgeon were clogging their salmon nets. As one resident later recalled, "Every sturgeon taken was mutilated or killed with an ax and thrown back into the water. The shores of the river would be lined with dead sturgeon." For a time, lake sturgeon were even used as hog feed.

By the 1870s, though, the fish were no longer being

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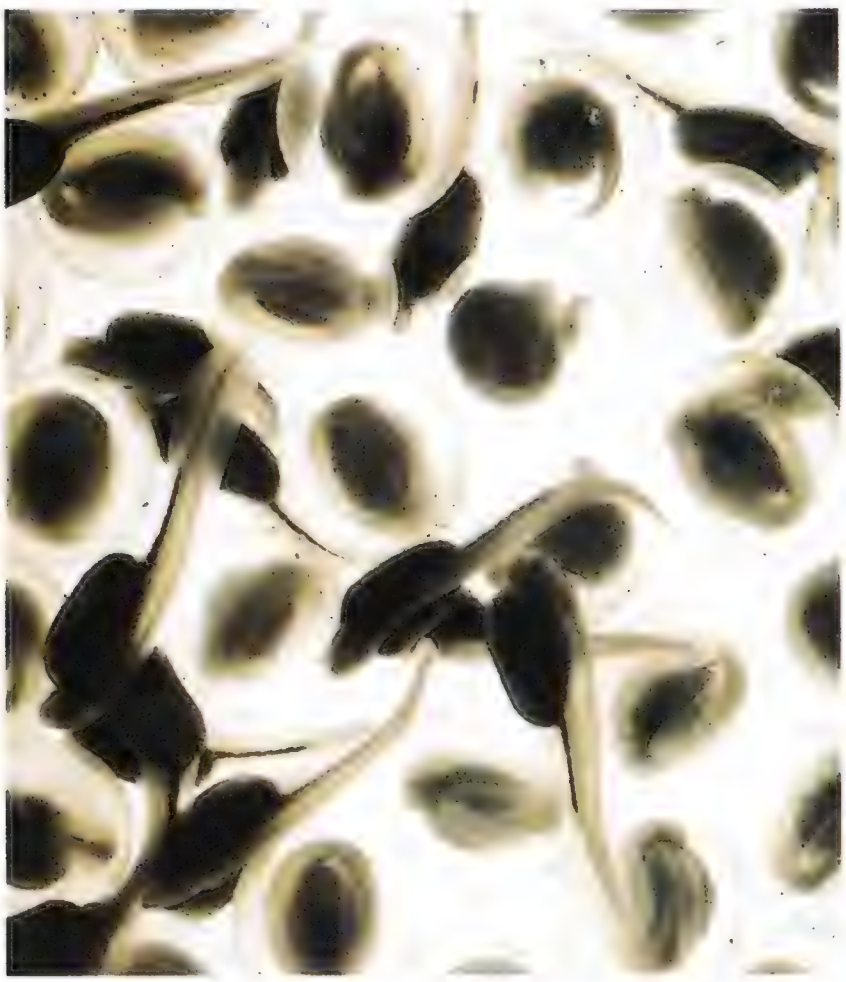
Student Chris White (left) and Arrowhead Fisheries worker return fish to holding pond after making tests.



Eggs from sturgeon caught by Cuanang and others hatch into fry, which are nurtured by their egg sacs.

squandered on livestock. Europe's craving for caviar and smoked salmon flesh was depleting the stocks that once abounded in the Thames, the Seine, the Elbe and the Po. Enterprising American fishermen began exporting tons each year to the salons and bistros of London, Paris and Berlin. In New York City, saloon owners routinely set out bowls of "black pearls" as a snack for their customers. The major U.S. sturgeon fisheries were on the Columbia, Sacramento and Delaware rivers, in the Chesapeake Bay area and along the Great Lakes. For a time, Sandusky, Ohio, was a national center of caviar production.

*From boom to bust in 30 years*

The fish were harvested with nets, traps, spears and "Chinese gang lines," which consisted of long lines of unbaited hooks that were strung across river bottoms. In Missouri, shovelnose sturgeon were pitchforked in river shallows. At the peak of the U.S. fishery, between 1885 and 1895, more than 25 million pounds of sturgeon was being harvested each year. But soon enough, the gill nets, underwater brier patches and pitchforks began to take their toll. In Lake Michigan, the sturgeon catch went from four million tons in 1880 to almost nothing by 1920. The Columbia River fishery peaked at 5.5 million pounds in 1892 and then dropped to less than 100,000 pounds just five years later. The Atlantic sturgeon catch, which peaked in 1890, was near collapse 15 years later.

By 1900, the American sturgeon boom was over. For a time it appeared that certain species—the lake, white and shortnose sturgeon—were in danger of extinction. Because the huge fish take so long to mature, and because fishermen targeted on "cows" that were bulging with roe, the creatures were slow to recover. A number of other factors complicated their comeback. In the East, mill dams cut off the shortnose and Atlantic species from their spawning grounds. In the West, dams on the Sacramento and Columbia rivers did the same thing to the white sturgeon. Shallow feeding grounds in San Francisco Bay were filled in for parking lots, hotels and other massive projects. One prime habitat for the white sturgeon, California's Tulare Lake, was drained for agriculture starting soon after the turn of the century. The fish have been protected for years now by laws that regulate or prohibit sport and commercial fishing. Recently, moreover, industrial pollution in many of the nation's waterways and lakes has been cleaned up. But the persistence of toxic wastes that accumulate in sediments poses a continuing hazard, and both habitat loss and soil erosion remain serious problems.

The idea of using hatcheries to augment wild sturgeon populations is not a new one. Nearly a century

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Spiny plates, called "scutes," serrate white sturgeon's back. Five rows of these run length of fish's body.

In underside view, four barbels precede sturgeon's toothless mouth, which protrudes to pick up morsels.

ago, the U.S. Fish Commission began such a program on the Delaware River. Eggs taken from females were fertilized with sperm stripped from males and incubated in cheesecloth trays or jars. But there was a problem. In a hatchery setting, the adhesive eggs stuck to the pails, spoons and forearms of workers; worse, they clumped together and suffocated each other. It wasn't long before the early hatchery advocates decided to concentrate their efforts on trout and other fish with nonadhesive eggs.

By the 1950s, Russia's vaunted sturgeon stocks, including the beluga, were in trouble because of dam building on the Volga and Don rivers. The Soviet scientists and hatchery operators used a compound that, when mixed with sturgeon eggs, could inhibit clumping. The miracle additive was plain old silt. The Russians also pioneered in the use of hormone injections to induce spawning. Today, in one of the world's largest fish-hatchery programs, Russia releases 100 million sturgeon fingerlings into the Caspian Sea each year.

As a head scientist at a Moscow research institute, Serge Doroshov was involved in the development of breeding and hatching techniques for both marine and freshwater fish. Consequently, he had ample opportunity to see how the Russian hatchery program worked. In 1977, while a liaison officer with the United Nations Food and Agriculture Office in Rome, he decided to move to America with his wife and children. At Davis, Doroshov has not been content merely to mimic the work of his former colleagues. In Soviet hatcheries, for example, captured fish are usually killed after spawning. Doroshov's people perform what amounts to a Caesarean on each ripe female, removing the eggs, suturing the donor and returning her to the Sacramento River to spawn again.

*Sturgeon surgery on the* Stephanie K.

Thus, when Abe Cuanang transfers his catch of four sturgeon to the Davis research vessel, the *Stephanie K.*, the stern of the boat resembles an operating room. A team of Doroshov's graduate students hoists the fish aboard, using a gantry for the larger ones. Each sturgeon is slipped into a green nylon stretcher and turned belly-up. A hood is placed over the head. A hose with running water is inserted in the mouth to keep the gills wet. The students take turns bending over the docile fish to cut a half-inch incision into the white belly and poke a finger inside to identify the sex. A male feels smooth inside; a female is lumpy. Then the incisions are sutured, the stretchers are tilted over the side and unripe sturgeon are returned to the water. Of the 20 caught this day by Cuanang and another fisherman, only four are kept as spawning candidates. These fish are deposited in holding tanks on shore and

later taken on a freeway ride to the main obstetrics ward, a Quonset hut on the Davis campus.

When the fish are ready to spawn, the researchers surgically remove the eggs, mix them with milt, add silt and put the mixture into glass jars. The eggs then incubate in the jars for a week or so, until they hatch. The sturgeon fry are nurtured by their own egg sacs for about 12 days. After that, they are introduced to the same kind of pellet food that is fed to commercially raised trout. So far, the Davis people have released a half million white sturgeon fingerlings into the Sacramento River. If enough of them survive to significantly increase the wild populations, then perhaps Doroshov's approach could be used in other parts of the country where researchers have been doing reintroduction work.

*The growing interest in fish farms*

It's too soon to tell whether restocking will one day enable fishermen to again produce a significant amount of caviar the old-fashioned way. But Doroshov's work has already encouraged a number of entrepreneurs to seriously consider the feasibility of sturgeon production based on modern aquaculture. He has demonstrated that sturgeon raised under controlled conditions have a much better survival rate than naturally spawned fish, that they grow twice as fast and that they mature much sooner. What all of this means, to the bottom-line folks, is that you might be able to make money growing and selling them—first for meat, later on for caviar.

Nobody seems to know exactly how many people are trying to start up sturgeon farms today. There may be ten or 11 commercial growers in California alone. One man who has a good head start is Ken Beer, a former Doroshov student who raises catfish and striped bass at his fishery in Elk Grove, California, and sells about 500 pounds of two- and three-year-old sturgeon a week. Most of his sturgeon wind up as specialty items in restaurants in Texas and California. They fetch a higher price than wild sturgeon because dealers are willing to pay more for a regular supply. Beer is moving into other markets, as well. He air-freights sturgeon fry to a commercial grower in Italy and he sells three-inch-long specimens to the aquarium trade. Now, a fee-fishing lake in Orange County wants to stock his sturgeon and so he's building another hatchery to keep up with the demand.

Mats Engstrom is not exactly just starting out in the business. His San Francisco-based company, California Sunshine Fine Foods Inc., has been wholesaling caviar for years. But this fall Engstrom will market about 25,000 pounds of homegrown sturgeon meat—his first aquaculture crop—and he expects eventually to be

Destined to end up in restaurants, 25-pound sturgeon swim in tank at a "farm" in Elk Grove, California.

Dean Badger, a commercial fisherman in Washington, returns an under-limit sturgeon to Columbia River.

marketing his own caviar, too. He raises white sturgeon the same way Doroshov does and he is convinced that it can be a profitable undertaking. "Our program is to generate a positive cash flow by selling the meat first," he says. "Finding restaurants and other buyers is no problem. Each year we will save a few nice females from the current hatch. The frosting on the cake comes when those fish start to mature and we begin producing caviar. There is no doubt in my mind about it—it is going to happen."

Another group of people who have more than a casual interest in Doroshov's work is composed of sport fishermen. Not long ago the United Anglers of California (UAC) held a shark-fishing derby in San Francisco Bay to raise money for the Davis program. California permits sport fishermen to catch sturgeon on baited hook and line. UAC members hope Doroshov's restocking program will eventually produce more fish like the one landed a few summers ago in the Carquinez Strait by Joey Pallotta III, a plumber from the town of Crockett. After a five-hour fight, during which he had to transfer from his light runabout to a cabin cruiser, Pallotta reeled in a 468-pound sturgeon that was nine feet long—a world sport-fishing record.

Limited sport fishing is allowed in Wisconsin, too, only it's done differently there. Every winter, some 7,000 men cut holes in a frozen lake near Oshkosh called Winnebago, set up shanties and squat inside them dangling "coaxers" in the water. The brightly colored decoys are designed to attract lake sturgeon and when one does appear under the hole, the fisherman drops a four-pronged spear onto it and hauls it up. Fish weighing more than 100 pounds are not uncommon, though most of the 620 or so sturgeon speared in Wisconsin each year are much smaller than that.

There is one other special-interest group that requires mention: poachers. "When you have fish that are worth $400 apiece and more on the black market," says Chief DeWayne Johnston, "you are going to have trouble." Johnston, who heads the Wildlife Protection Branch of the California State Game and Fish Department, keeps an eye on fishing boats and other craft working in the coves of San Francisco Bay at night. "Poachers like to operate under the cover of darkness," he says. "They will run without boat lights and try to snag the fish." Some can beat a hasty retreat when caught, outrunning the department's patrol vessels in their $20,000 power skiffs.

Information from other fishermen can lead to pinches. One such tip directed wardens to a Bay Area seafood dealer who was handling local sturgeon eggs. Officers obtained a search warrant and found the man's refrigerator crammed with illegal eggs. He was fined $10,000. In 1985, a sting operation by the department resulted in the sentencing of 13 men who were caught selling fish illegally, including 450 pounds of sturgeon. Poaching is likely to remain a problem as long as the demand for sturgeon remains high.

In June, more than two dozen state game officials, fishery scientists and sturgeon farmers got together at the Davis campus to talk about their work with the fish. It soon became apparent that much is being done outside of California to restore sturgeon as a viable resource. In Oregon, they are being reintroduced into rivers where pollution and overfishing wiped them out. In Wisconsin, the sturgeon-spawning capacity of the Wolf River has been expanded seven-fold by riprapping the banks with rocks. Oklahoma is moving to identify spawning sites and protect them from potentially harmful dam projects and, thanks to the enforcement of tougher commercial-fishing regulations by Oregon and Washington, the Columbia River now produces some of the largest sturgeon in the world. So, nearly a century after its reckless exploitation from coast to coast, things are finally beginning to look up for the big fish that makes its living on the bottom.

Caviar lovers are likely to receive that news the same way the great pianist Franz Liszt (see page 112) reacted when he was introduced to sturgeon on a visit to Moscow in 1843. During a gala dinner in his honor, Liszt was amazed to see several men enter the banquet hall carrying a seven-footer. He had never seen such a fish, and he began to applaud. Soon, the other guests joined in. "The applause grew so lively," a Russian magazine reported, "that the chef, who had walked out on the stage behind his enormous artistic creation, was obliged to take bows for the insensible fish."

Chefs Christian Redouin (left) and Werner Glur give a splashy setting to caviar at Los Angeles hotel.

STOLICHNAYA
CAVIAR
CAVIAR

Tattered "street arabs" in New York were recorded around 1888 by reformer Jacob Riis. Appalling plight of homeless youths resulted in an exodus on "orphan trains" that survivors recall with mixed emotions.

*By Donald Dale Jackson*

# It took trains to put street kids on the right track out of the slums

*From 1854 to 1929 about 150,000 orphans were shipped by rail from cities in the East to foster homes in the rural Midwest*

Noah Lawyer is 86 and his arthritic hips force him to navigate on crutches, but there is nothing feeble about him. He has small hard eyes, a bull neck and the pile-driver grip of a man who has shoveled coal on steam locomotives and wrestled bears in a Wild West show. His senses are sharp and his memory is strong and free of sentimentality. Noah Lawyer (p.100) was and is a tough hombre. He's a survivor.

He is also a kind of human artifact. Lawyer is one of only a few hundred elderly Americans alive today who, as children, traveled to the West on "orphan trains." The trains ferried orphaned and abandoned kids from the congested East to new families and new lives in the heartland. Operated from 1854 to 1929 by New York's Children's Aid Society and other pioneering child-welfare agencies, the "placing-out" or "free home" programs aimed at giving deprived youngsters a fresh start in what was viewed as a more wholesome atmosphere. When the trains chugged into a preselected town, farm families and townspeople looked the passengers over and made their choices.

Some of the transplanted children took root in the prairie and some didn't. Many were treated well and eventually adopted; others were shuttled from one family to another; some were abused and forced to work like oxen. In effect it was an indentured system without strings: the child (through the agency) or the foster parents could end the arrangement if they chose.

By today's standards the orphan trains and the traumatic, auctionlike lineups at journey's end seem callous and even barbaric. But in fairness they should be judged in the context of a time when the law treated ten-year-olds as adults and boys sweated beside their fathers in coal mines. In its own day the placing-out program, though controversial, was generally accepted and applauded as a reasonable solution to a painful dilemma. Like many orphan-train veterans, Noah Lawyer is ambivalent about his experience. He feels grateful that he was rescued from a scuffling, hand-to-mouth existence in Middleburg, New York, but resentful that his foster family treated him more like a hired hand than a son.

His blind father took Noah and three of his four brothers to an orphanage after their mother left home with the youngest child. The Lawyer boys were so poor that they wore gunnysacks, shared a single pair of boots and scavenged the streets for food. In 1907, when Noah was seven, the Children's Aid Society gained custody of the boys and put them on a train bound for the little town of Savannah in northwestern Missouri.

"The trip was a great adventure," Lawyer recalls. "We couldn't get done gawking out the windows. Boys were in one compartment and girls in another. We had no idea where we were going. At Savannah they took us to the courthouse and lined us up, you know, like they was going to mow us down with a machine gun. People walked up to us and said a few words and moved on. My brothers were all picked the first day, but I wasn't taken till the second. People came up and felt our arms and legs, and mine were kind of spindly. I was hoping that whoever picked me would have plenty to eat, that was my main goal."

Young Noah was chosen by a man who lived with his sister and mother on a large farm. Food was plentiful and so were the chores. "I was eating good, so I thought I had the world in a downhill pull, but they had me milking and working in the fields and tending the stock. They sent me to school for about three months out of the year."

He remembers that his schoolmates shunned him and called him a bastard. A girl he fancied agreed to run away with him, but her parents scotched the plan "because of my background, I think." His foster fam-

Agents of Children's Aid Society accompanied a dozen well-dressed youngsters to Missouri in 1909.

ily was stingy with affection. "There was no hugging or kissing and they never said they loved me. I never got nothing at Christmas, but they didn't give anything to each other either."

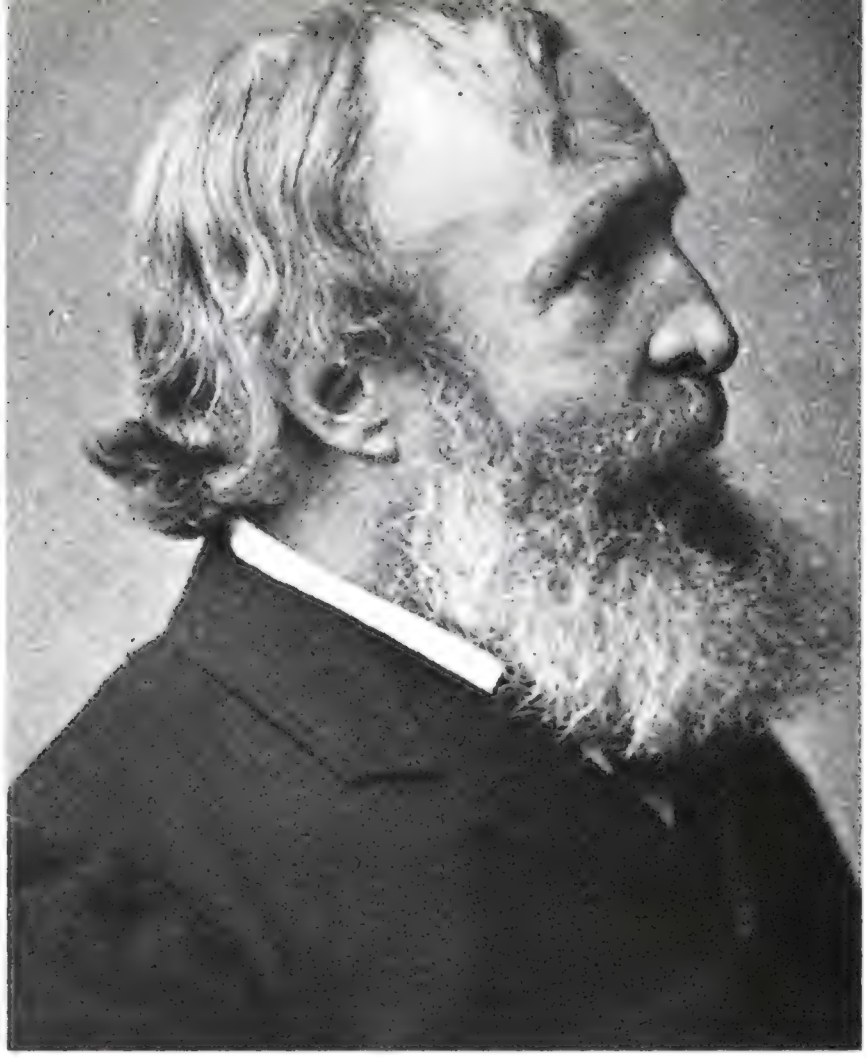
In his teens he ran away repeatedly, only to be caught each time and brought back to be punished, but at 18 he left for good, finding work as a railroad fireman and later as a wrestler with a touring carnival. He believes now that the trip West, despite the severity of his years on the farm, saved his life. "If I'd stayed East I'm sure I wouldn't have made it," he says. "I would have starved or wound up killed or in jail. I learned right and wrong on the farm." His small eyes shine. "I'd-a been a humdinger otherwise."

The father of the placing-out program in the United States was an idealistic theologian-turned-social-worker named Charles Loring Brace. Shocked by the spectacle of thousands of youthful "street arabs" sleeping in doorways and stealing to survive in the New York City of the early 1850s, Brace joined several other reformers in founding the Children's Aid Society. Orphan asylums and similar institutions, Brace believed, did nothing to liberate street kids from poverty and hopelessness. What they needed, he felt, was a chance to grow up strong and self-reliant as part of a family.

"The family," Brace wrote, "is God's Reformatory; and every child of bad habits who can secure a place in a Christian home is in the best possible place for his improvement." Especially in the West, where there were "many spare places at the table of life." Like many Easterners in mid-19th-century America, Brace was smitten by a romantic vision of the sweeping plains and their large-hearted people. Farmers, he wrote, were our "most solid and intelligent class," and Westerners possessed "a peculiar warm-heartedness" and sense of equality that ennobled them.

After a year of dispatching children individually to farms in nearby Connecticut, Pennsylvania and rural New York, the Society mounted its first large-scale expedition to the Midwest in September 1854. Forty-seven boys and girls between seven and 15 made the memorable trip from New York to Dowagiac, in southwestern Michigan. Their chaperon described their excitement when the city kids beheld an apple orchard from the train window: "Arms stretched out, hats swinging, eyes swimming, mouths watering, and all

Started in New York in 1853 by a pioneering social worker, the Society initiated the orphan-train concept.



Society's founder, Charles Loring Brace, was convinced the West had "many spare places at the table of life."

screaming—'Oh! oh! just look at 'em! Mister, be they any sich in Michigan?' " Arriving at the small-town depot before dawn on a Sunday, they slept a few hours on the floor and then trooped to church en masse. Homes were found for all 47 within a week.

As the western trips multiplied and expanded, each orphan-train mission followed a tightly organized scenario. First, legal guardianship of the children was established; if the parents were alive they had to relinquish custody to the Society. The agency's western agents found likely towns, and committees of local leaders were formed to pass on applications from potential foster parents. Sickly, retarded or incorrigible children were scratched from the passenger list.

An advertisement appeared in the local paper a few weeks prior to a train's arrival. "WANTED: HOMES FOR CHILDREN," the ad in the Lebanon, Missouri, *Daily Record* began in 1909. The notice said the children were "of various ages and of both sexes" and "well-disciplined"; listed the Society's terms—education, religious training and treatment "in every way as members of the family"; and noted that "distribution will take place at the opera house." The local screening committees were a weak link in the system, since small-town ministers, editors or judges were reluctant to reject a potential foster parent as unfit if he were also a friend or customer.

The clangorous arrival of an orphan train and its rambunctious, wide-eyed passengers was a spectacular event in a four-block-long prairie village. The local journal in Hebron, Nebraska, reported that the 22 waifs shipped there in the winter of 1890 attracted an audience that packed a local church. "There was not a dull, apathetic boy in the lot," the paper declared. "All were bright and self-reliant, and most of them had good faces. The greatest contest was for the possession of a sweet-faced, modest girl of 14. There were as many as a dozen wanted her." After listing 19 children who

found homes, the story added that three others were "overlooked in the distribution." The unlucky ones were usually escorted to another town.

The agreement that the new parents signed with the Society obliged them to care for their charges "in sickness and in health," to send them to school full-time up to age 16 and to church, and to pay the boys for their labor when they reached 17. They were to notify the Society if a child proved "unsatisfactory"; the Society, on the other hand, could remove a youngster if his home conditions were judged "injurious to his physical, mental, or moral well-being." This provision necessitated follow-up visits by the agents, normally once a year, but some unhappy youths complained that the agents never appeared.

*The "worst-tempered boy" he ever saw*

The Children's Aid Society rated its transplanted wards successful if they grew into "creditable members of society," and frequent reports documented the success stories. A 1910 survey concluded that 87 percent of the children sent to country homes had "done well," while eight percent had returned to New York and the other five percent had either died, disappeared or soiled the record by getting arrested. Two boys had become governors, one in North Dakota and the other in Alaska territory; both had been plucked from the Randall's Island orphanage in New York and sent to the same town—Noblesville, Indiana—on the same train. Other high-achieving alumni included a Supreme Court justice, two congressmen, 35 lawyers and 19 doctors. Only a few of the letters from foster parents and children that appeared regularly in the Society's annual reports contained bad news. One from an Ohio farmer in 1862 called his charge "the worst-tempered boy I ever had anything to do with" and fumed that at school he would only "kick the little boys and call the girls bad names."

But if imitation connoted success, the program was a smash. New York Catholics, who had attacked Brace for sending Catholic children to Protestant homes and even charged that they were enslaved, began transporting kids from the New York Foundling Hospital to new homes in the country about 1875. The hospital's system differed from the Children's Aid Society's in that children were assigned to specific families before they boarded a westbound train. Institutions in Boston, Chicago and other cities launched their own versions. A Chicago agency advertised children "free on 90 days trial," and provided winsome descriptions: "One boy baby, has fine head and face, black eyes and hair, fat and pretty; three months old."

Brace and his successors (he died in Switzerland in 1890) were flayed by critics on several counts. Some

Irma Schnieders, who brandished a broom when she was not quite three, ended up in Missouri with parents who pampered her. "I was spoiled," she remembers.

Midwesterners suggested darkly that the program was a plot to pollute the prairie with delinquents. An investigation in Minnesota concluded that emigration didn't work well with kids over 12 (Brace agreed). Stories that children were abused by their "parents" surfaced periodically. Brace replied loftily that "we hold [the stories] to be bosh," but nevertheless he did send investigators to check.

By 1910 the ranks of homeless children placed with

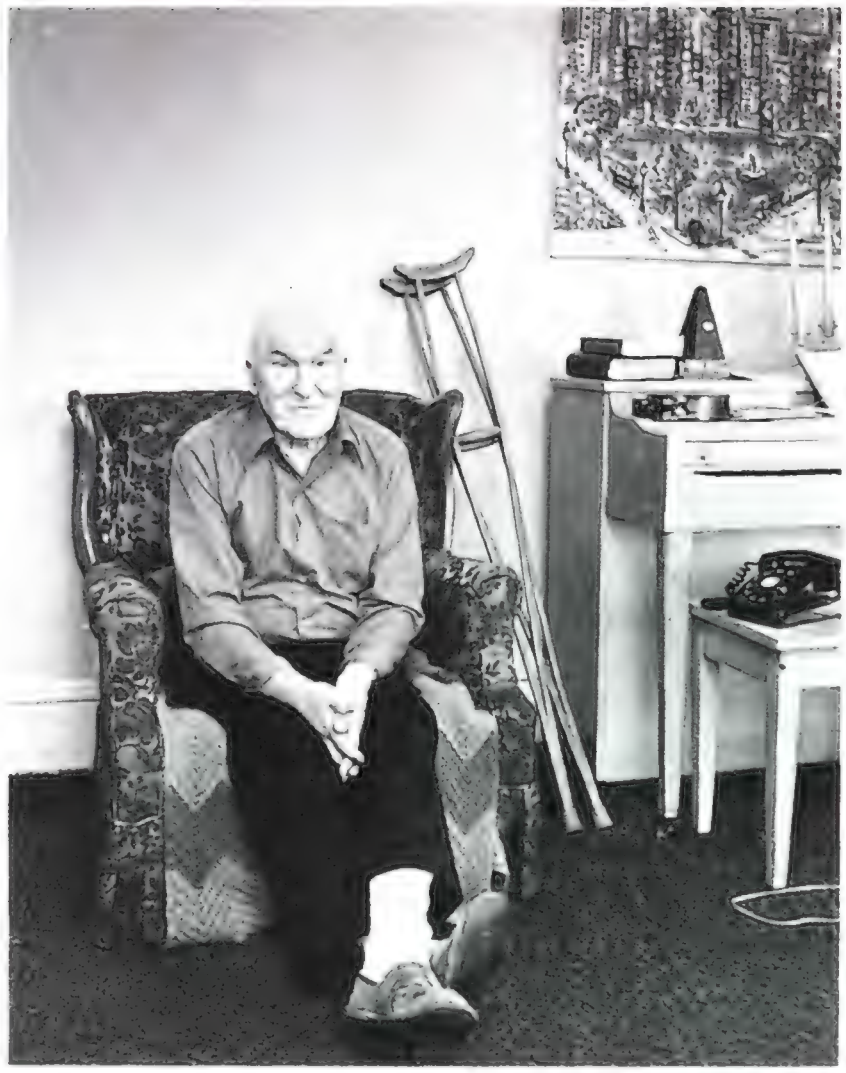
Not long after Lester Studer was photographed in a "pageboy," he was adopted by Kansas couple that took him in. "They had lost their first son," he recalls.

At four, Jim Kaup (right) held hands with foster sister, Anna, in the yard of their home in Nebraska. Before retirement, Kaup worked as a mechanic.

rural families by the Children's Aid Society had grown to a legion more than 105,000 strong. Placements by the Foundling Hospital and other agencies, together with the Society's additional trainloads before the program ended in 1929, may have swelled the overall total to as many as 150,000. The Society's peak year was 1875, when 4,026 kids rode the heartland express.

Another clutch of statistics indicated that the orphan trains contributed to the fulfillment of one of Brace's major goals, the reduction of juvenile crime and vagrancy in New York. The number of juveniles arrested for both petty larceny and vagrancy dropped sharply during the program's first 25 years.

Orphan trains eventually puffed to a stop because they no longer reflected the accepted wisdom among child-welfare workers and because new laws made them obsolete. State and local governments were funding foster care for orphans by the 1920s, compulsory



Posing with foster brothers and friend, Noah Lawyer (far left) stood next to real brother, who was visiting. Lawyer, 86, says he was treated like a hired hand.

education and anti-child-labor statutes were on the books, and social workers had agreed that keeping families intact was generally best for all concerned. Fewer street arabs prowled New York's avenues, and the demand for farm labor had declined. The high-spirited bands rattling west on the Erie, Burlington and Missouri Pacific tracks became smaller and smaller, and finally disappeared altogether.

While the trains clattered into history, those who had ridden them settled quietly into adult lives as farmers and housewives, small-town merchants and schoolteachers. Except at an occasional reunion they rarely spoke of their experience, and many preferred to forget it. But in recent years a dogged Missouri researcher-genealogist named Evelyn Sheets began tracking down survivors and interviewing them. Mrs. Sheets, who recently suffered serious injuries in an automobile accident, was particularly affected by the poignance of those long-ago lineups at the courthouse or church or opera house. "It still gives me goose bumps," she told an interviewer. "Imagine the church emptying out and one child still standing there. A lot of them are still trying to convince themselves that their parents didn't abandon them."

Aided by a $3,800 grant, Mrs. Sheets teamed up with folklorist Michael Patrick, who is with the University of Missouri at Rolla, and volunteer Evelyn Trickel to organize the first reunion of Missouri orphan-train veterans in her hometown of Trenton. Last fall, Noah Lawyer, his brother and several others joined a crowd of 200 people at the Grundy County Museum to see a slide show and reminisce about the old days. Subsequently, in separate interviews conducted throughout Missouri and Nebraska, a number of other survivors and their relatives talked about the way it was.

The first hazy recollections usually have to do with tenements, orphan homes and sudden desolation. Rose Cranor of Albany, Missouri, who died a month after attending the reunion, told her daughter Bedonna that her father turned her over to an orphanage after her mother deserted them. "She remembered getting buckets of beer for her father at a saloon in New York," Bedonna says. "She said he cried when he left her at the orphanage." Rose was three years old. Susie Schulz (pp.102,103) of Vandalia, Missouri, now 84, recalls Saturday outings with other orphans. "We'd walk on the Brooklyn Bridge and go to Coney Island, and later we'd have gingersnaps and milk. There were geraniums at the home. I still think of it whenever I see them."

The day the youngsters boarded a train and headed west was both thrilling and unnerving. Eighty-eight-year-old Irma Schnieders (p.98) of Jefferson City, Missouri, a Foundling Hospital orphan, recalls she was playing with a boy named Charlie when the nuns told her it was time to go. "Charlie wasn't coming, and I didn't want to leave him. I had a numbered tag—I re-

*Donald Dale Jackson, a regular contributor who lives in Connecticut, has written recently about tunnels, cabooses and the conservation of primates.*

Dorothy Davidson liked her doll but not her first foster mother, whom she bit. She ended up in home with her sister, Phyllis (in jacket), and brother.

member my number was 36. There were 25 or 30 of us on the train." "They gave me a bath and combed my hair," says Susie Schulz. "My twin sister and I cried the whole time. We didn't want to go." Jim Kaup (p.99), now 66, was sent from the Foundling Hospital to a family in Stuart, Nebraska. "We rode the train for about two weeks," he recollects. "My foster mother said it took two more weeks to get me clean after I got there."

When the children reached their destination, their prospective new parents were waiting to inspect them. Mattie Darnell Stroker, whose late husband, Howard Darnell, rode an orphan train to Bowling Green, Missouri, in 1910, remembers her father-in-law describing their appearance at the courthouse as resembling a show-and-tell class. "He said that each one had a little act. It was like a show. One boy told jokes and did acrobatic tricks. The Darnells didn't know about it until a druggist told them. They went over and Howard came up and hugged Mr. Darnell's legs. He said no at first, but came back and said he wanted the little fat boy."

Eight-year-old Susie Schulz and her twin sister, Dorothy, were afraid they would be separated, but the Society agent J. W. Swan insisted that they be kept together, and they were. Gus Jahne of St. Joseph, Missouri, who died last year, told his son Gary that he felt like he was part of a slave auction. "They stood on the courthouse steps at Savannah and people felt their muscles," Gary Jahne says. "A lot of folks were looking for free farm labor." Gus and his brother John went to the same family. Dorothy Davidson (above) of Mexico, Missouri, who at 61 is an ingenue among orphan-train riders, bit the hand that was soon to feed her. "The man that chose me kept encouraging me to go to his wife," she says, "but I didn't like her. So I bit her."

The Society tried to place brothers and sisters together or at least close to each other, but in practice it didn't always work out that way. Sometimes the foster parents didn't want the children to know about their siblings. Lester Studer (p.99), now 72, didn't know he had a brother living near his Nebraska home until both were grown, when his brother found him. He was even more surprised when he discovered later that two older sisters had remained in the East. "We got together much later," he says, "and we were strangers." But cheeky Dorothy Davidson, after a short stay with the woman she had greeted so rudely, wound up in the same household with her brother Woody and sister Phyllis. Their foster parents, both lawyers in Trenton, Missouri, adopted all three of them.

For some, life on the farm was full of toil and deprivation. Mary Goth, a 93-year-old resident of a Clinton, Missouri, nursing home, was kept out of school after the third grade so she could devote herself to full-time cooking and housekeeping. "My foster mother was cruel—oh, she was a crackerjack," she says. "They wanted one of the sons to get me pregnant so I'd stay home and work. How could they do that?" Jim Kaup longed for the love and affection he was denied. "They never touched me or said they loved me, and they didn't want me to call them Mom and Dad. Think

what that does to you. They weren't mean, they were cold, and they showed no feeling toward me. When I was 15 or 16 I decided I'd live in a garbage can before I'd stay there any longer."

Others were raised as Brace hoped they would be, as fully assimilated members of warm and generous families. Irma Schnieders remembers being "petted and pampered. I was spoiled. They gave me a good life. It worked out for the best in my case." And Robert Turner, 83, was reared by a couple in Franklin, Nebraska, who accepted him as the equal of their natural children. "I was family," he recalls. "They were salt-of-the-earth and never mean to me. My real father remarried and had a second family, and I was better taken care of than those kids were."

*An old man who sat alone and cried*

Many orphan-train children were shuttled to several families before they found a permanent home. Rose Cranor stayed for varying lengths of time at eight different places. In a memoir she wrote for her daughter Bedonna she recalled one where "a young woman taught me dance steps," another where "a man beat me with a razor strap" and a third where an old man sat alone at the dinner table and cried. Dorothy Davidson's sister, Phyllis Jesse, was sent back to New York from Missouri because of suspicions she had "mixed blood," but then her foster family had a change of heart. "They gave me some shots in New York and I thought that was the reason I was sent there," Phyllis remembers. "I found out later that it was racial."

The transplanted youngsters viewed the annual visits by Aid Society agents with mixed emotions. "My mother said she got scared every time Mr. Swan came by," says Bedonna Cranor. "She was afraid he might take her away again." But 81-year-old Terah Marie Harrelson of Bellflower, Missouri, who lived with a wealthy farm family near Bowling Green, remembers agent Swan as a "wonderful, kind person who took me fishing with him and had dinner with us." Jim Kaup recalls no regular visits by his Foundling Hospital sponsors, but he has a vivid memory of a well-dressed, richly perfumed woman—"I can still smell her"—who came to the farm twice and lifted him up. "I'd never been picked up like that. I wondered if it was my mother. Nobody ever told me."

Many orphan-train voyagers never stopped wondering about their parents. Some tried to find them. Others deliberately chose not to. In some cases the real mother or father made the reconnection. However they confronted the unanswered questions in their past, the emotional cost was high. Many still weep openly as they talk about it 60 and 70 years later. Long before the last orphan train had completed its run, critic Henry W. Thurston took a shot: "It does not seem fair to the relatives," he wrote in 1919, "that they be compelled to surrender a child permanently in order to get whatever care he may need temporarily." Thurston called Brace's idea "the wolf of the old indenture philosophy of child labor in a sheepskin disguise of a so-called good or Christian home."

Ethel Lambert, archivist for the still-flourishing Children's Aid Society in New York, says, "When I first read the records I felt haunted by the feelings those children must have had. It seemed frightful. But when I looked into the conditions and lack of services in those days I came to see the placing-out program as a solution, and a good one." Scholar Miriam Z. Langsam concluded that despite "many weaknesses in Brace's system, successes were impressive. Most of the children sent into the West apparently enjoyed better and more useful lives than if they had remained in the slums of New York as delinquents and dependents."

The survivors interviewed for this story seem to share several common values. Most of them could be called fatalistic. "It's strange how fate sets you up," Rose Cranor told her daughter. "Whatever fate gives you, that's what you've got." They are strongly committed to marriage and family; divorces are almost unknown. They believe in accommodation, making the best of it, playing the hand you're dealt. "The way I think of it is that I was chosen. Most parents don't have a choice, but mine did," Jim Kaup concedes. "And they took me."

Susie Schulz recalls leaving New York orphanage and fearing separation from twin, Dorothy (opposite).

Buttoned and bowed, Susie (left) and Dorothy embody orphan-train spirit, holding hands, smiling bravely.

*By Jack Fincher*

# 'Come and see my shining palace built upon the sand'

*Sandcastles aren't child's play anymore; now they mean big structures, big contests and big business—until the tide comes in*

Sculpture by Sandtastic company was carved for a promotional film and destroyed by waves within hours.

One morning last summer the chill coastal fog lifted off the San Diego seashore to reveal—teasing contradiction in terms—a snowman made of sand. It was the artwork, if you can call it that, of Gerry Kirk, co-owner of Sand Sculptors International (SSI). Kirk had carved his "snowman" sand man as a whimsical comment on its impermanence. Still, for fun in the sun that aspires to acceptance as an authentic art form—or at least as a challenging craft—there was something faintly mischievous and self-mocking about the exercise. After all, how seriously should we take a means of creative expression that literally began as child's play?

That is a good question—and one currently at the heart of a stormy controversy within the small band of sand sculptors who have gone professional. But first a word of advice for those who regard such beachfront shenanigans only as a way to meet pretty girls and handsome boys or keep the kids occupied while working on a tan: it's time to get your head out of the sand. For a considerable period now, building sandcastles has meant quite a lot more to a whole lot of people. Organized groups appear to have pioneered the medium in Atlantic City and along the shores of Lake Erie during the early 1900s, using bas-relief rather than free-standing sculpture. And though no hard evidence exists, there are a few who believe the Egyptians made sand models of the pyramids, and Michelangelo and Leonardo, sand miniatures of their statues. But the first documented large-scale sculpture, a 90-ton fantasy sandcastle, was not constructed until 1969 on Moonlight State Beach in (where else?) Southern California.

Today, from Hawaii to Holland, from Alaska to Mexico, sand sculpture has become an increasingly popular phenomenon that is close to becoming a big-business enterprise. Convention and visitors' bureaus, movie studios, TV networks, oil companies, hotels, automobile manufacturers—any operation that needs to catch the public eye before it blinks—are spending thousands of dollars to woo the fast and facile talents of the few available professionals. Within this group of artists, discord has emerged over the definition of sand sculpture as art. While their dispute rages quietly, from the medium's subject and content to the legitimacy of using additives and the value of permanence, they all agree that shaping sand offers elements of performance and participation that are unique, folksy and almost tribal in impact.

Pragmatists like Gerry Kirk and his partner, Todd Vander Pluym, for instance, are not averse to constructing commercial sand versions of everything from new automobiles and skyscrapers to shopping centers and corporate logos. Kirk got his start carving precision scale models of supersonic aircraft in plaster, and Vander Pluym, an architectural designer, holds awards for his part in such developments as the Los Angeles In-

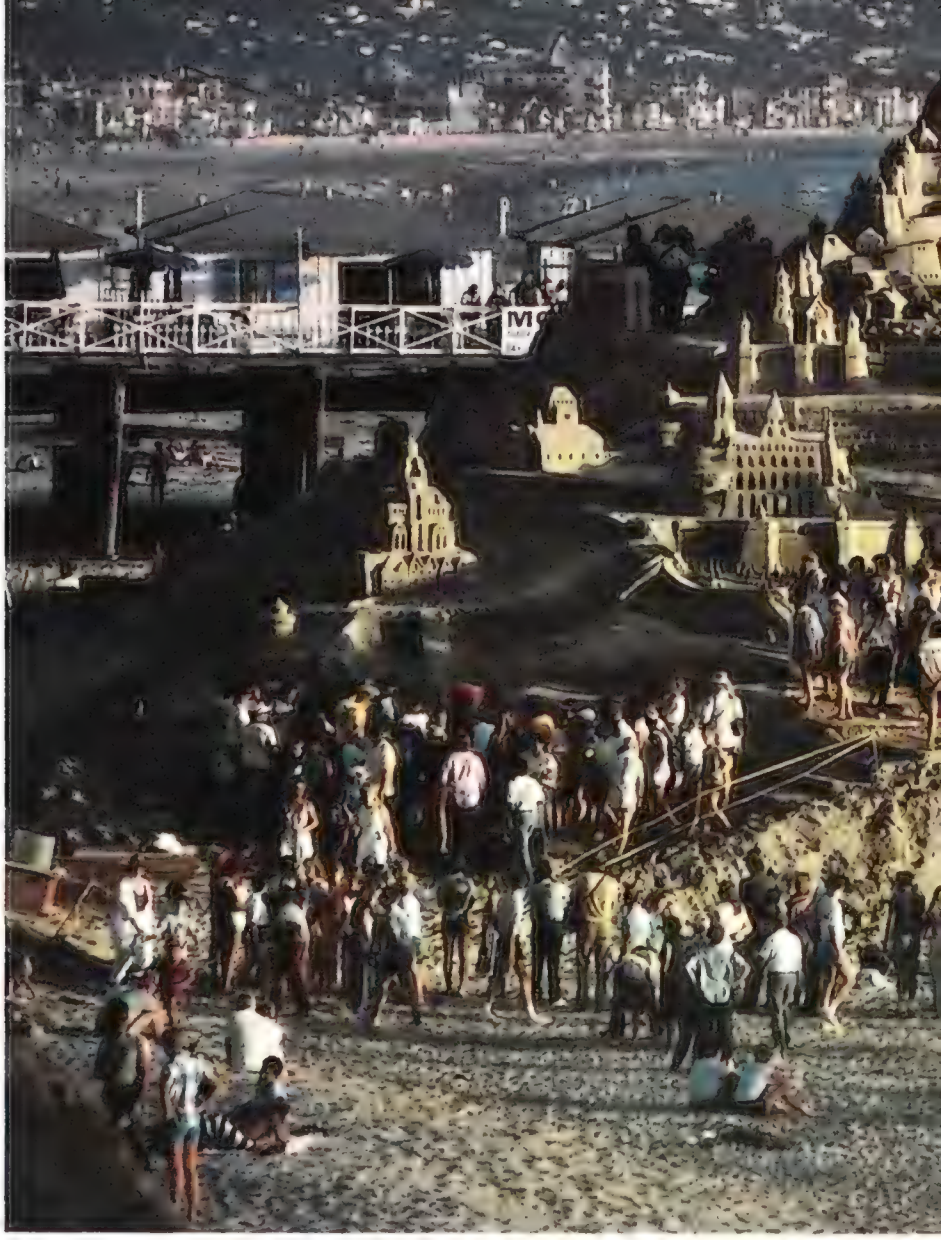
*Bluebeard's Castle*, built on Treasure Island, Florida, by SSI, drew 400,000 visitors during its 24-day life.

*Photographs by Chad Slattery*

*Sculpture that washes away*

Using 48,734 tons of sand, the SSI team built the world's largest sand sculpture, *Lost City of Atlantis.*

A member of the Norman Kraus team finishes work on detailed re-creation of England's Durham Cathedral.



SSI team was joined by 400 volunteers when they built *Sleeping Beauty's Castle* in San Diego last year.

ternational Airport and that city's Richfield towers.

For a fee, the two will go almost anywhere and sculpt almost anything, within reason. If their commission takes them off the beach, they will even supply the sand. Frequently, however, such endeavors carry their own set of problems. For a project in Chicago they took sand from the Lake Michigan beachfront and carted it downtown to McCormick Place. The sand proved so wind-sifted that water percolated through it too fast for binding cohesion. The model of the skyscraper kept falling down as if struck by an invisible wrecking ball. "For three days we worked," recalls Kirk. "People loved it, and most were sympathetic. I think we built that tower 17 times over."

Determined that their next Chicago project would prove more successful, Kirk and Vander Pluym went in search of the best sand available. They found the right blend in nearby Cicero, where they ran into even more trouble. As Kirk drove toward the lakefront, he found his car surrounded by an escort of hostile toughs. At a traffic light, he made a fast left turn, leaving his tormentors behind. "I had a picture of myself trying to explain what I was doing there," he laughs.

They have also run up against teamsters who have been less than enthusiastic about trucking tons of sand

They used 13,100 tons of sand on 120-foot-by-130-foot base, copying Disney, French and German castles.

onto a convention-center floor. Even when the sculptors have been able to get the sand delivered, they then have to face building engineers. Not long ago in Las Vegas, the ballroom floor of the MGM Grand Hotel began to tremble as a small fleet of forklifts began piling raw sand in place. The building engineer rushed up and asked how much the sculpture was going to weigh. When Kirk replied six tons, the engineer gasped and told him to take the sand away. Kirk and Vander Pluym have become expert problem solvers and their solution this time was to race to the nearest lumberyard to buy huge sheets of Styrofoam. They cut, laminated and formed them into a skeletal core for an outer layer of sand. As a result, the sculpture weighed a good deal less than originally planned.

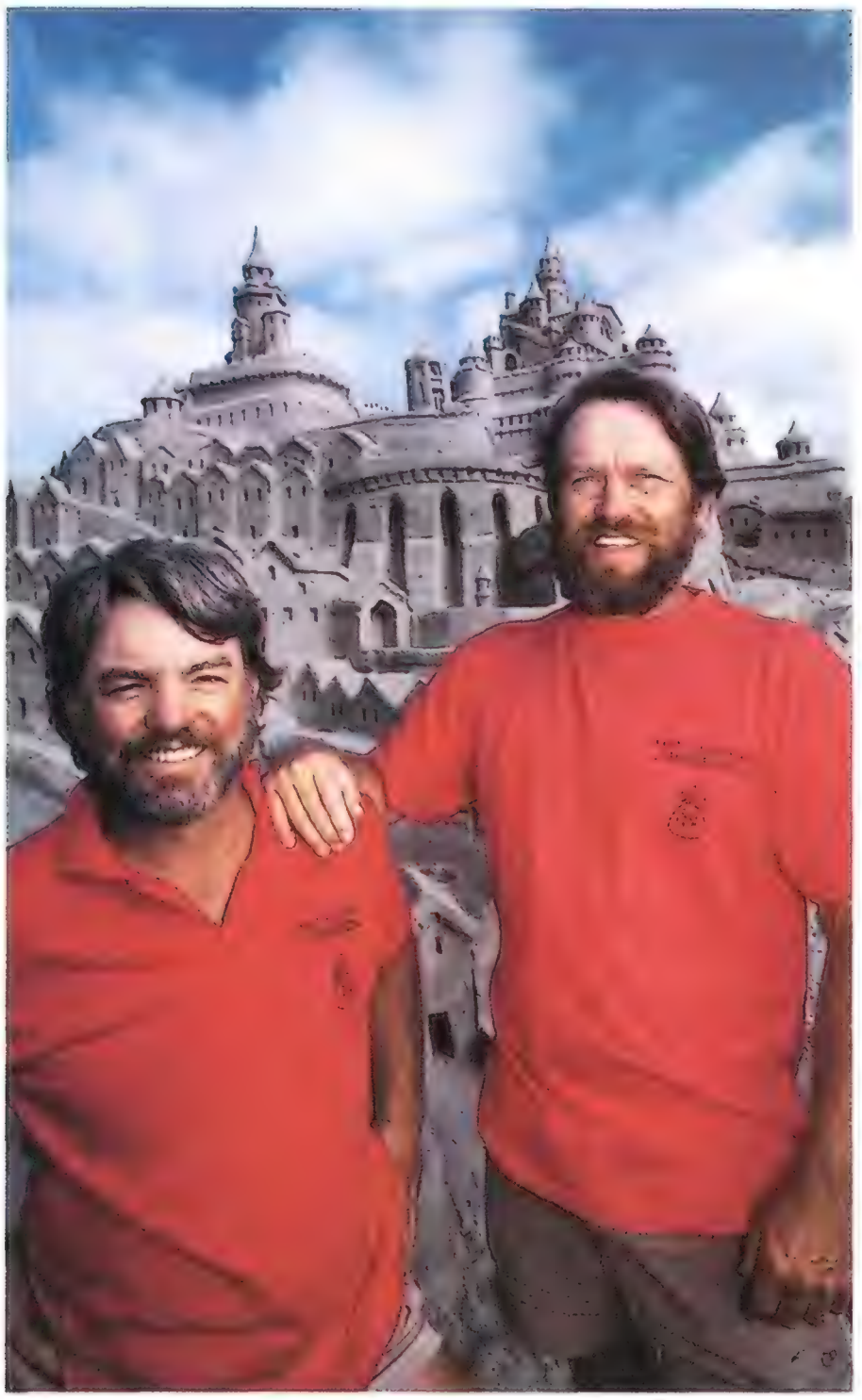
In spite of all of the logistical problems, sand sculpture seems to be getting bigger and the techniques are becoming more complex, expensive and elaborate. Gone are the days when all you needed to build a sandcastle was a beach and some suntan lotion. Sand sculptures range in weight from less than one ton to tens of thousands of tons; equipment varies from hand trowels, shovels and five-gallon buckets to diesel-powered tractors and hydraulic jackhammers. Even more massive and elaborate works are in the planning stages. As

Steve Prudente, Doug Harle top off entry (below) in 1985 Canadian competition in British Columbia . . .

. . . where their team, the Sandinis, placed second. Group used colors to enhance the work, *Dragon Siege*.

*Sculpture that washes away*

In British Columbia, the SSI team moved 40 tons of sand in two hours to fill forms for basic structure.



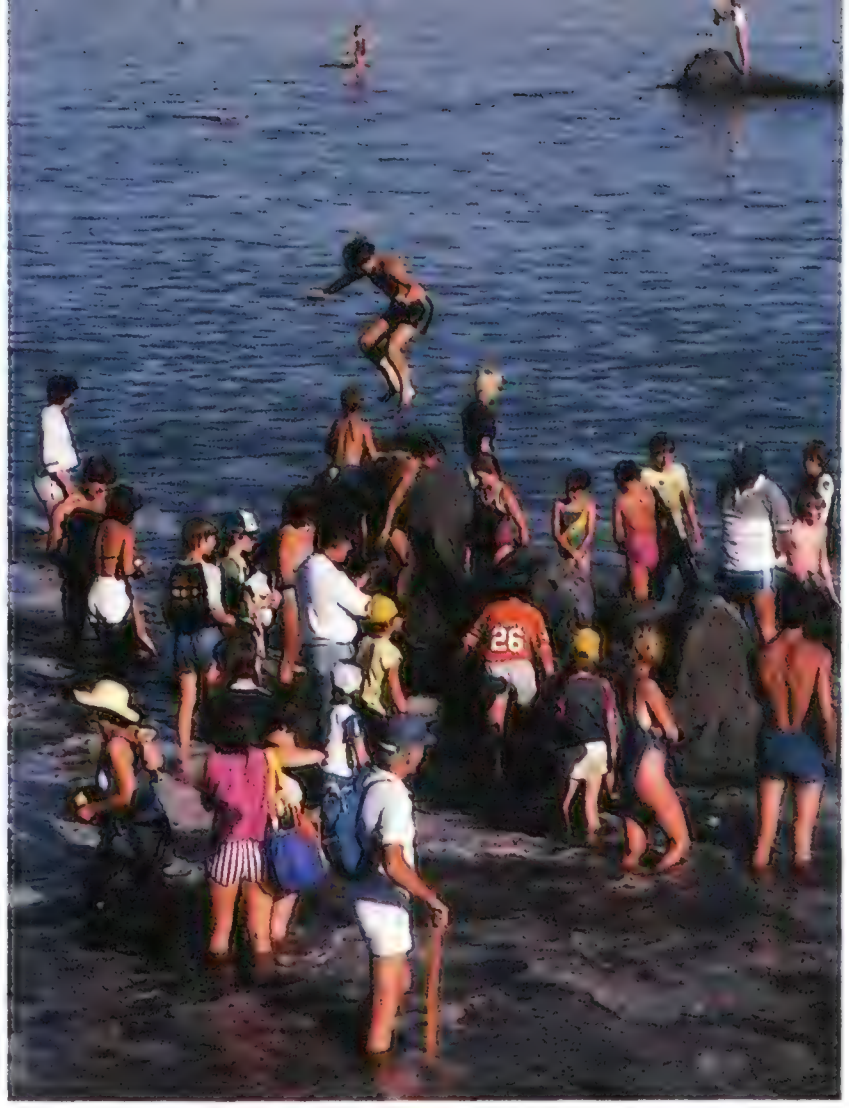
Gerry Kirk (left) and Todd Vander Pluym hold records for the longest, tallest, oldest and largest sand works.

the SSI crew and their 1,200 volunteer helpers bustled about *Bluebeard's Castle* (p. 104) in Florida early last year, three Saudis in burnooses and flowing robes appeared, observed and presented their cards. The result of this meeting was a tentative proposal to build a $500,000 *Arabian Nights* castle on the desert sands where Lawrence himself once rode.

Another professional sand sculptor, Norman Richard Kraus, describes himself as a purist and follows a more traditional approach to his art. Kraus, an interior designer in Encinitas, California, takes his sand as it comes and doesn't believe in adding anything to it to make it more colorful or more adhesive. He specializes in models of famous cathedrals, temples and castles. A production by Kraus is not just a standard re-creation but a meticulously researched Notre-Dame or Durham (p. 106) cathedral, Mont-Saint-Michel, Heidelberg or Carcassonne in all its original glory.

Kraus takes a dim view of artificial enhancement, ornamental doodads or anything plastic. "I'm not saying it's wrong, but if you can't make it just with sand, it doesn't interest me as much." This Dean of Sand Sculptors (he supervised the 1969 Moonlight Beach sandcastle) believes that the perishability of this art form is an essential part of its esthetic appeal. Kraus also frowns on the use of adhesives that make sand resistant to the routine erosion of wind and tide, beach bum and dune buggy. "I'd rather rely on good compac-

Careful carving of packed sand resulted in imposing sculpture of Norse warrior drawn by four polar bears.



Winning warrior entry collapsed under the stomping feet of children and the waves of the incoming tide.

tion, construction, style and buttressing," he admits.

Kirk and Vander Pluym have a more laid-back attitude. "There is something to be said for watching the tide roll in and clean your canvas," Vander Pluym concedes. "But there is so much more that hasn't been explored." Besides, Kirk points out, sand and water alone have physical limits. "Sand is probably the touchiest thing there is to carve. You have to be firm but delicate, and work from the top to the bottom."

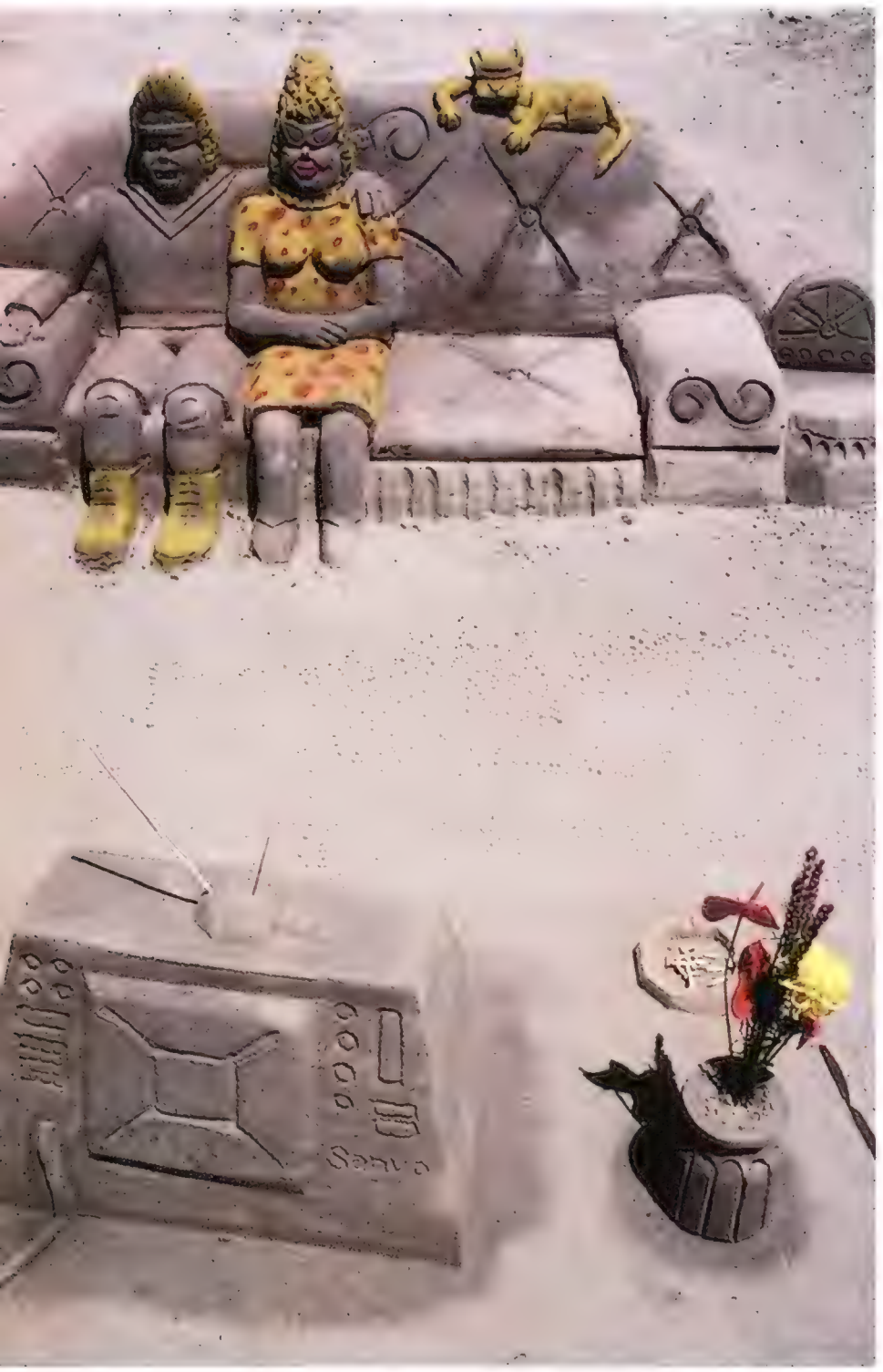
Sandcastles, it seems, tend to bring out the child in all of us. Edna St. Vincent Millay recognized that years ago when she wrote: "Come and see my shining palace built upon the sand!" Vander Pluym is less eloquent but he echoes the idea. "I love nothing more than just going down to the beach and building. I enjoy having people watch and maybe take part. In 1977, we organized a 12-mile-long castle and had 20,000 people work on it. We just grabbed them off the beaches from Marina del Rey to Redondo. And when we finished, grown men were hugging each other in tears."

Nowhere does sand sculpture as spectator sport and team camaraderie reach the fever pitch that it does every summer at the world championship Canadian Open Sandcastle Competition in White Rock, British Columbia. It is a four-hour event with thousands of dollars in prizes and last year drew 135 teams in six categories, attracting more than 200,000 spectators. Building time is limited because of the tides, so the competition places a premium on planning, preparation and teamwork.

Kirk and Vander Pluym (winners of three titles in the last five years) led their team and were determined that nothing would stand in the way of winning another title. For several weekends they had rehearsed two projects; they finally selected a Norse warrior at the helm of a battle sled drawn by four polar bears. Taking their place in a 40-by-40-foot plot, adjacent to a number of rivals, they listened to the rules of the contest over the loudspeaker. Materials allowed: sand; floatable, nonpolluting decorative items; no adhesives. Tools: masonry, garden and household implements, one wheelbarrow and one ladder. Temporary forms permitted if the sand is sculpted afterward. Teams: ten adults and as many children under 12 as they could muster. Fun: unlimited, in exchange for $35 entry fee.

At the blast of a cannon and the shriek of a train whistle the battle was on (above). The SSI team picked up the first of its nine wooden forms and hurried into position. Shovels filled with sand flew and in no time the form had been filled and leveled off. "Come on, kids, let's go!" shouted Kirk, and eight jubilant youngsters piled into what amounted to a large sandbox

*With fond memories of childhood beaches, writer Jack Fincher tried his hand at sand carving, found it was fun to do, but the results were awful.*



Hotel cake decorator and sand artist Joe Maes added flowers, cigarettes to *New Wave Family at Home.*

and ran in place to stamp it down tightly. "Okay, kids, out!" cried Kirk, and team members hoisted another form atop the first.

"You're four minutes behind!" yelled an observer and Kirk shouted "Power dig, power dig!" Shovels flew more furiously and in less than an hour the stack of sand forms for the warrior stood as high as a man's head. Kids were now skimming water into buckets and sluicing it onto forms for the polar bears, their young faces intense and frowning, their pace slower and more deliberate. Someone cried "Let's top this baby off!" and a bucket brigade climbed up and splashed the last of the warrior's forms. Moments later the metal bands on the forms' sides (for quick release) were popped free and the boards gently pried off. Kirk and Vander Pluym began to carve from the top. About halfway through the competition, the Norseman's heroic visage and ferocious polar bears were emerging from a mighty glacier of sand.

"You've got less than two hours," called the timekeeper. To the crowd's awe and delight, man and animals started taking on even more definition. Someone in the crowd said, "Hey, you guys, that Viking looks great," and spontaneous applause broke out. With their rivals working furiously beside them the inevitable happened. The head of one of the polar bears, as it was being trimmed under the jaw, fell off. A few minutes later, the polar bear was back snarling. With 15 minutes left, Kirk cried out "I think we can make it!" One of the judges called "Go for it!" Applause swirled, eddied, built. The whistle blew, the contest was over.

"I can't believe they can do that in four hours," marveled one woman. "It's incredible." The judges thought so too, and at 5 P.M. the SSI team won the first prize of $5,000, accepting it as the tide ran in tiny rivulets around their bare feet. A half-hour later, the beach was all but deserted save for several muscular young boys who stood a "deathwatch" around each of the championship entries. And then, as if by unspoken signal, they fell upon the lesser works with their fists in an orgy of pent-up energy.

Then they gathered around the Norse warrior until the tide rose and retreated with a subtle, unseen flow. At that moment they smote the stern and valiant Viking down the middle. As one half slid into the water, a small boy found the courage to climb on a polar bear's back and dive off. Within seconds others joined him. By 6, the tide had swept the day's creations out to sea, taking with it what Todd Vander Pluym calls our first true sand sculpture: the human footprint.

Candles lit the *City of Jerusalem,* SSI project to raise funds for Hollywood's Hope Lutheran Church.

*By Christopher Porterfield*

# Liszt's escapades have tended to obscure his genius

*With resurgence of Romanticism and a rash of centenary celebrations, his multifaceted contributions to music are being reevaluated*

Liszt was a notorious lover and bon vivant who passed his final years in the soutane of a Roman Catholic abbé; a supreme piano virtuoso and compulsive performer who retired from concertizing in public at age 35; a composer who made common cause with Richard Wagner in "the music of the future" only to see his achievement eclipsed by Wagner himself. He was a self-avowed democrat with a lifelong weakness for title, rank and privilege. He was kind, vain, generous and arrogant. He proclaimed himself "Magyar in heart and mind" yet never spoke Hungarian, forgot much of his native German and preferred French throughout his lifetime.

More than 10,000 books and articles are in print about Liszt. He has always inspired copious hagiographies, reinterpretations, attacks and defenses. Was he an idealistic Byronic spirit or a self-aggrandizing charlatan? Was he, as eminent Wagnerian Ernest Newman contended, a fatally divided personality in whom "the natural vulgarian [warred] with the natural nobleman to the end of his days"? Or was he, as present-day biographer Alan Walker maintains, "the central figure in the Romantic century (Berlioz and Wagner notwithstanding)"? In fact, the old wizard still has everyone guessing.

An aged Liszt, in clerical garb, still exhibits traces of the magnetism which made him alluring to women.

Perhaps some answers will emerge during the current year-long festivities marking the 175th anniversary of his birth and the 100th of his death. In June, in Washington alone, the Library of Congress, Smithsonian Institution, Kennedy Center and two cathedrals hosted a week of lectures, master classes and concerts, while in Stockholm a huge exhibition of Lisztiana was opened. Throughout North America, and in Weimar, Paris, London, Vienna, there are other celebrations, culminating in a Liszt piano competition in Budapest next month.

Some of his compositions hold their place in the repertory, despite the fact that the bulk of his vast output—more than 1,300 works—is neglected. His piano pieces remain a staple of recital programs—glittering vehicles, and sometimes booby traps, for many a virtuoso. Today we tend to appreciate his music with a satiric smile. Ah yes, Liszt, goes one modern view; matchless pianism and panache, but *so* theatrical. All those fustian climaxes mixed in with the genuine power and emotion. Rather embarrassing.

Yet a musician of such preternatural talent and energy is not to be dismissed. A growing band of performers and scholars argue that beneath Liszt's florid surfaces, a profound musical intelligence was at work, perhaps even a prophetic one.

Meanwhile, the Liszt legend rolls on.

"Celebrity," according to an epigram that he liked to quote, "is the punishment of talent and the chastisement of merit." Maybe so, but Liszt certainly didn't do badly by it. Hostesses besieged him with both bed and board in mind. Berlioz and Chopin befriended him. Ingres drew him. Balzac put him in a novel, though unflatteringly (in *Béatrix*, Liszt appears as the calculating, posturing singer Gennaro Conti, a man pretending to be an artist, "who receives his inspiration from heaven" but is inwardly "as cold as a well-rope").

## *Child prodigy to "centaur-piano"*

Liszt first took Europe by storm as a pianist, and as such remained famous during his lifetime. He was called the "centaur-piano," implying that he and the instrument somehow formed a single organic creature. From his first concerts as a child prodigy, when he seemed barely able to reach keys and pedals, he was pronounced incomparable, almost beyond belief, little short of miraculous.

As an adult, he was scarcely exaggerating when he wrote, "You see my piano is for me what a frigate is to a sailor, or his horse to an Arab—more indeed: it is my very self."

His most exciting efforts were the grand tumults in which he wove several distinct tone colors together at once, piling sonority upon sonority and building to

a crashing climax. In the face of such onslaughts, another distinguished virtuoso, Anton Rubinstein, could only shake his head and say, "We are all children beside Liszt." Shimmering cascades of notes, breathtaking leaps from top to bottom of the keyboard, trip-hammer octaves, thundering chords, quicksilver chromatic scales that seemed to run out of his fingertips —Liszt could do it all, and with ease.

He also had awesome power. In some quarters he was derided as a "smasher of pianos," and in fact he did break quite a few, leaving a trail of splintered wood and wire all across Europe. After a resounding Liszt performance at a Paris salon, Camille Pleyel, a musician as well as a founder of a piano-making firm, hovered by the instrument, gazing sadly at the strings. "I am inspecting the field of battle," he explained to a friend. "I am counting the wounded and the dead."

Liszt couldn't resist playing tricks in public. He brought so much technique to a performance that, to some extent, his technique *became* the performance. This penchant for flashy and trivial stunts—for "too much tinsel," as Robert Schumann put it—would dog his reputation throughout his career, although as he matured he chastened it considerably. Later in Liszt's life no less a judge than Wagner pronounced his performance of Beethoven sonatas (which Liszt liked to play in a melodramatically darkened room) so authentic that they were like hearing the works re-created in one's presence.

Such was the fervor of his following that when he made his debut in St. Petersburg, two young musicians in the audience vowed, according to the journal of one of them, "to keep the anniversary of this day sacred forever." After a performance, jubilant fans would detach the horses from his carriage and pull him through the streets by torchlight.

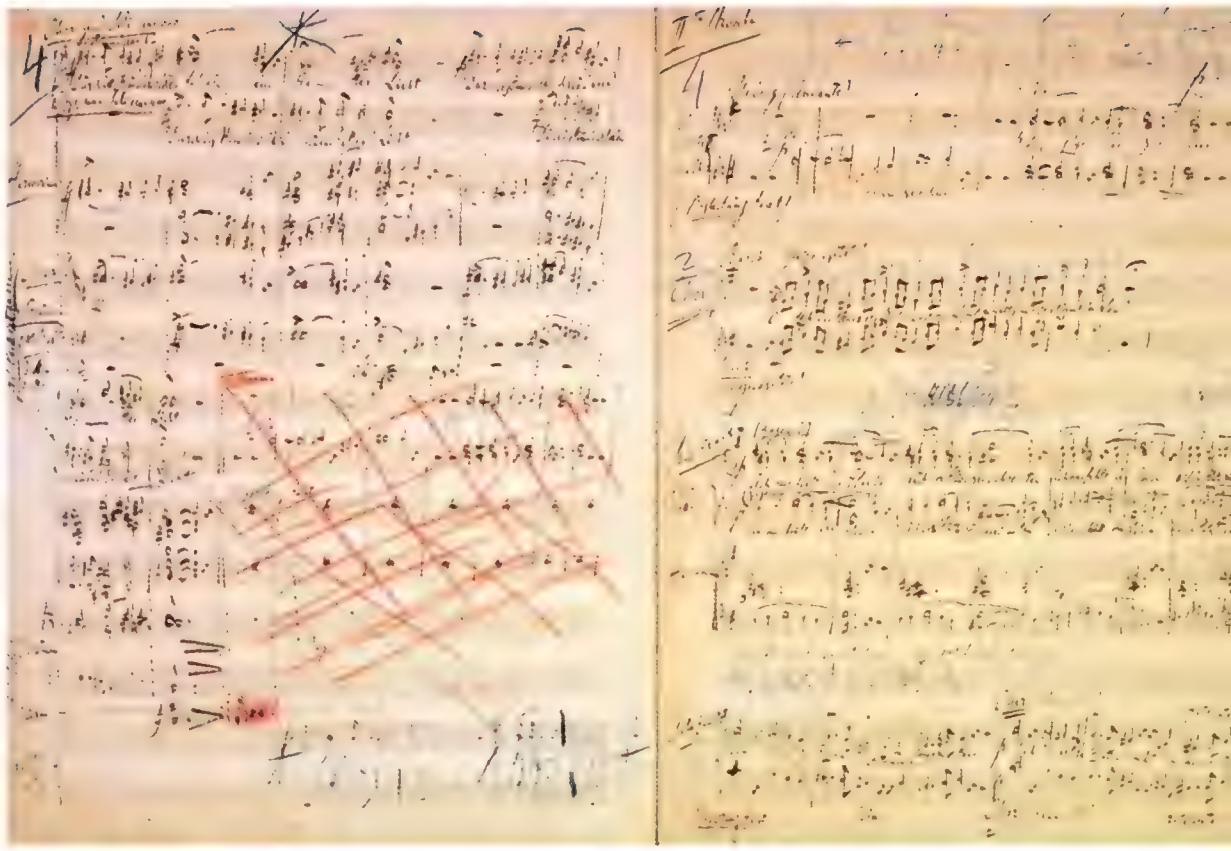
Thus exalted, Liszt was ready to insult monarchs. He dared to tell Louis-Philippe, the "Citizen King" who had ascended through the 1830 Revolution, that under him France had changed indeed—"but not for the better." When Czar Nicholas I of Russia had the temerity to chat during one of his performances, Liszt broke off his playing and said sarcastically, "Music herself should be silent when Nicholas speaks."

Tremendously tall, astonishingly lean and theatrically intense, with deep-set eyes and hair flowing to his shoulders, Liszt had a galvanic effect on audiences. "He gives his proud head a toss," Amy Fay, one of his American students, wrote, "throws an electric look out of his eagle eye, and seats himself with an air."

He presented a vivid incarnation of that romantic ideal, the creative ego in the ecstasy of inspiration. Sophisticated females in his audiences literally shrieked and swooned. During the furious ovations that followed, jewels were sometimes flung at his feet along with bouquets. After he left the stage, the gloves or handkerchief he had negligently tossed aside would be ripped to pieces by the faithful vying for a fragmentary relic. Two Hungarian countesses once fell to the floor of a salon and fought to exhaustion over one of his snuffboxes. One woman kept a cigar butt in her bosom for years, evidently content to endure the odor because it had once been pressed by the divine Lisztian lips.

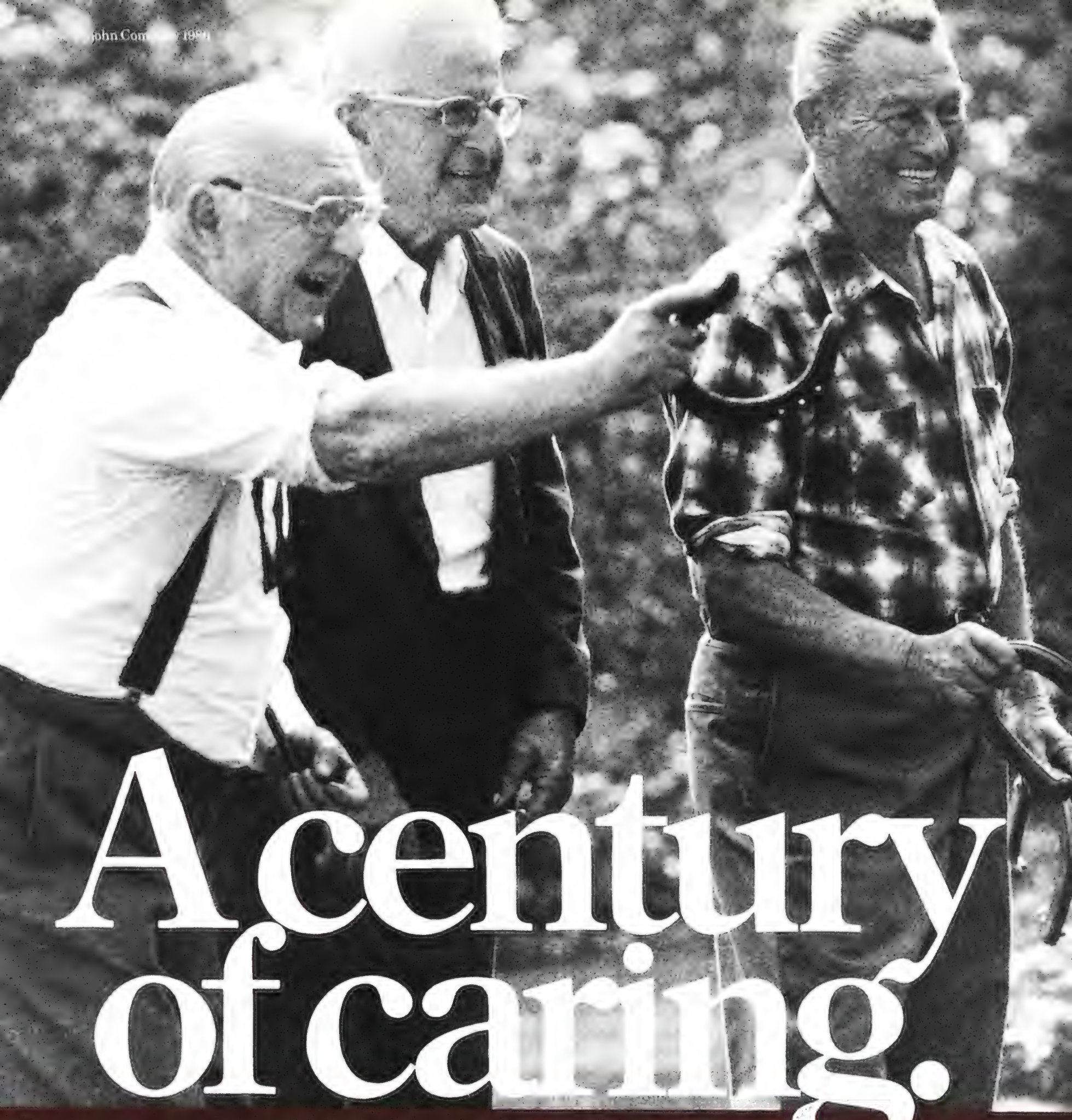
He was linked with French novelist George Sand, who was without doubt a true, comradely friend. The beautiful and talented German actress Charlotte von Hagn wrote him a love poem on her fan, and then there was Marie Duplessis, the original for Dumas' *La Dame aux camélias* (and so for Verdi's *La Traviata*). These liaisons and many others, true or false, did not enhance his reputation.

A more disastrous attachment was with a fiery young adventuress named Olga Janina, who billed herself as the "Cossack Countess." Olga pursued Liszt to Rome and pressed herself upon him as a student. He was then 60, long since an abbé, his mane all white above his clerical garb. Olga burst into the Villa d'Este, where he had rooms, dressed as a garden boy.



Dedicated to his patron saint, manuscript of sacred choral music shows his revisions. Liszt scratched out parts that did not please him.

*The author wrote on Juilliard School conductors' class in September 1984.*



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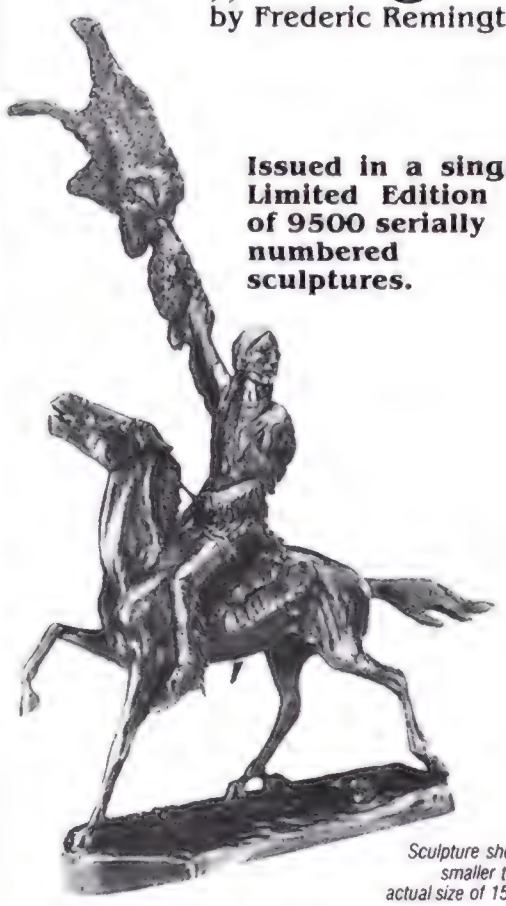

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She followed him to Budapest. When Liszt tried to break things off, he found himself shut in a hotel room with a suicidal Olga during a harrowing all-night scene. After she threatened him with a pistol, she took poison herself but was still alive the next morning. With the help of the police, Liszt finally sent her packing to Paris.

The composer did form two deep and long-lasting attachments, though neither culminated in marriage. One, which covered nine years during his early manhood, was with the French Countess Marie d'Agoult, who bore him three children. The other, which spanned 15 years during his middle age and which in an attenuated form lasted the rest of his life, was with the Polish-born Princess Carolyne von Sayn-Wittgenstein. The earlier affair ended badly, the latter sadly, as we shall see. To Liszt biographers, these two women represent virtually the only fixed points in a life that was long and turbulent.

Liszt was born in the Austro-Hungarian village of Raiding in 1811. His father was a land steward on a small part of the Esterházy estates. Little "Franzi" grew up under two potent influences. The first was the Catholic Church; he had a mystical streak from the beginning, and his head was filled with dreams of saints and martyrs. The second was the gypsies who camped outside his village, whose abandoned music and dancing thrilled him.

His talent emerged early. By the age of nine the boy was ready to play his first solo concert, at an Esterházy palace. Soon after, he was taken off to Vienna, 50 miles away, to audition for the prominent pedagogue Carl Czerny, who had been a student of Beethoven's. As Czerny later described the scene, the pale boy swayed on the piano stool as if drunk and "threw his fingers quite arbitrarily all over the keyboard." But Czerny was astonished at the raw talent in the prodigy's improvisations. His verdict: "Nature herself had formed a pianist."

When Adam Liszt moved the fam-


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ily to Vienna, Czerny took up where nature had left off. Franz also played some concerts in Vienna and, by some accounts, received a blessing in the form of a kiss from Czerny's old master, Beethoven. (In Liszt's version of the incident, Beethoven exhorted him, "Go! You are one of the fortunate ones.")

Next it was to Paris in 1823, and that city, too, was soon agog over "*le petit Litz*" (the French always had trouble pronouncing Liszt's name). At 12, he was launched on an international career. Public and critics alike were dazzled by his playing. He was a phenomenal sight reader. He could play practically anything set before him—even reduce a complex orchestral score—and could transpose into another key as he went along.

These heady, youthful years came to an end with a shock. During a holiday at Boulogne, his father caught typhoid and died. Franz was 15. "On his deathbed, my father told me I had a good heart and understanding," Liszt recalled years afterward, "but he feared that women would confuse and dominate my life."

The times were tumultuous. Revolutions in 1830 and again in 1848 struck at entrenched monarchies throughout Europe. In the arts, Romanticism, with its celebration of unfettered individuality, was sweeping away the Neoclassicist serenity of the 18th century.

Liszt and his mother settled in Paris, where he plunged into an erratic, bohemian existence, keeping odd hours and forming what would become lifelong habits of drinking and smoking. Full of typical Romantic agonies and real curiosity, he read voraciously and chaotically in an attempt to improve his rudimentary village education, and developed a "bitter disgust against art," especially his own performing prowess, which he saw as little more than "a source of amusement for distinguished society."

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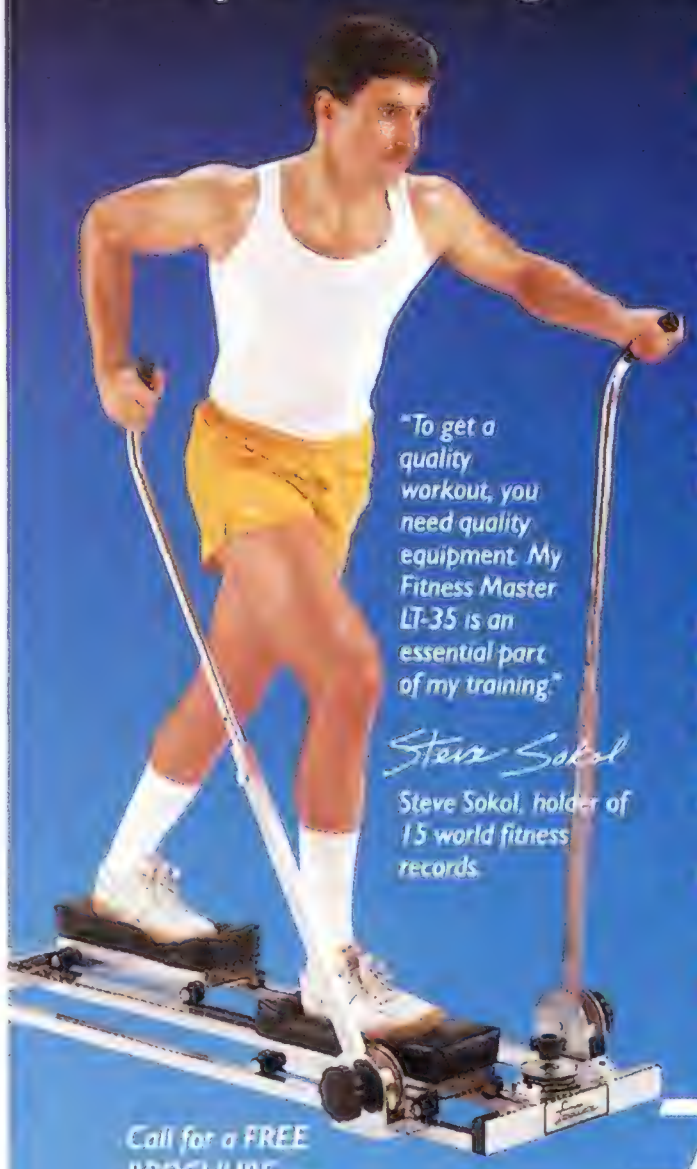

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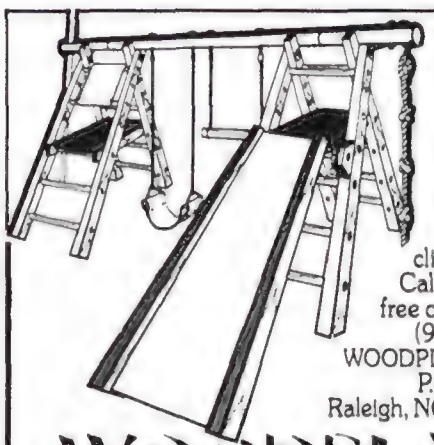

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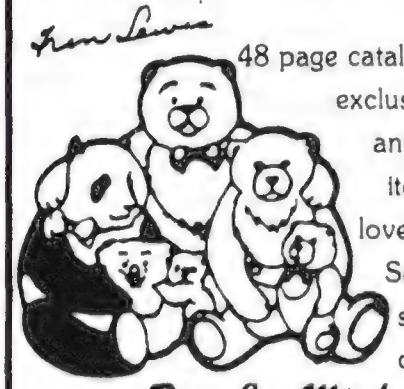

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Admirers of George Sand (in hat, with Chopin as bird in hand) included Liszt (kneeling), Delacroix standing behind. Sand did the landscape, a friend the figures.

ni's concert at the Paris Opera House and was enthralled by what he heard —and perhaps equally by what he saw. For here was a virtuoso who seemed to play on the audience as much as on his instrument.

Fired by Paganini's example, Franz set out to do for the piano what Niccolo had done for the violin. He threw himself into a frenzy of study and practicing—8, 10, 12 hours a day. "My mind and my fingers are working like a pair of lost souls," he wrote to a friend. "Provided I don't go mad you will find in me an artist! Yes, an artist . . . such as is required today."

Paris at this time was the piano capital of the world. The Romantics had adopted the instrument as their chief means of expression—Chopin's compositions fostered new ways of playing—and enormous strides were being made in piano manufacture and keyboard methods. The upshot was a whole generation of formidable virtuosos, all based in the city. Liszt surpassed them all. He came of age simultaneously as a man and as an artist. His composing also took a great leap forward, first when he adapted some of Paganini's knucklebusting caprices to the keyboard, later when he worked out a set of his own *Transcendental Etudes*. The latter he intended quite literally to demonstrate how he had transcended the barriers of piano technique and to show other pianists the way. Schumann called them "studies in storm and dread for, at the most, ten or twelve players in the world." Accomplished pianists today still blanch at the sight of them.

Enter the Countess d'Agoult. She was 28, seven years older than he, elegant, restless and a bit neurotic, married and the mother of two children. They met at a fashionable Paris salon and fell immediately into soulful conversation about God and the destiny of Man. Liszt, she later wrote, "awoke a whole world that had been slumbering in me." Further meetings turned into trysts. After two years, in 1835, they eloped to Switzerland.

For the next five years Liszt and Marie led a wandering existence, mostly through Switzerland, Italy and France. He taught, composed and played occasional concerts. She collaborated with him on essays and articles, had her confinements, created what domesticity she could around her genius.

At first it was an idyll — in Marie's eyes, at least, a noble but humble renunciation of worldliness. "A bad piano, a few books, the conversation of a serious minded woman suffices for him," she noted in her diary.

But did they? At about the same time Liszt was writing to the Abbé Lamennais, "Will my life be forever tainted with this idle uselessness which weighs upon me?" Their temperamental differences began to grate. Marie, who once was characterized as "six inches of snow covering 20 feet of lava," suffered depressions and brooded. Liszt yearned for a wider arena of activity.

In 1839, over Marie's bitter objections, Liszt resumed his performances in European concert halls. Their quarrels came to a head, with Marie,

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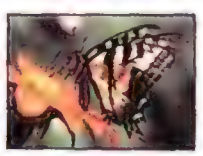

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no mean phrasemaker, calling him a "Don Juan parvenu." When Liszt embarked on a tour to raise funds for a Beethoven memorial, Marie returned to Paris and was reconciled with her family. "Franz left me for such small motives," Marie would later complain in her memoirs. "It was not to do a great work . . . but for salon successes, for newspaper glory, for invitations from princesses."

Plenty of those things certainly came his way. The next seven years were the peak of the most public musical career of his century. He became unquestionably the most successful performer and perhaps the most famous musician in the world. Marie took a measure of revenge by publishing a thinly disguised novel about their liaison, *Nélida*, in which an egotistical painter callously breaks off with an aristocratic woman only to fall ill and die in her arms, admitting the wrong he had done her.

Liszt's real-life plot took a more surprising twist. He walked away from everything Marie accused him of leaving her for. Touring had taken a tremendous toll, even on a man of Liszt's iron constitution. He had resorted to diets, quinine, opium, homeopathic medicines and lots of brandy to "keep the machine running." Now the mystic in him was disenchanted again. "Always concerts!" he said. "Always to be a valet of the public. What a trade!"

Carolyne von Sayn-Wittgenstein induced him to give up taxing concert schedule.

The ravishing Marie d'Agoult was also a bit of a tartar, left Liszt in a huff.

Besides, Grand Duke Carl Friedrich had offered him the post of music director at Weimar. He accepted, and after 1847 never again played in public for money.

Doubtless this decision was bolstered by his meeting, while finishing a tour in the Ukraine, the Princess von Sayn-Wittgenstein. Daughter of a wealthy Polish landowner who had bequeathed her 30,000 serfs, Carolyne was 28 and separated from her Russian husband. Unlike Marie, she was no beauty. George Eliot described her as a short, dark woman with the habit of smoking strong black cigars. But even more than Marie, she appealed to Liszt's earnest side. She was dauntingly intellectual, a voracious reader, could dominate any conversation and was deeply versed in church history and doctrine. Her great project in life was the writing of an impenetrable 24-volume opus, *Causes intérieures de la faiblesse extérieure de l'Eglise.*

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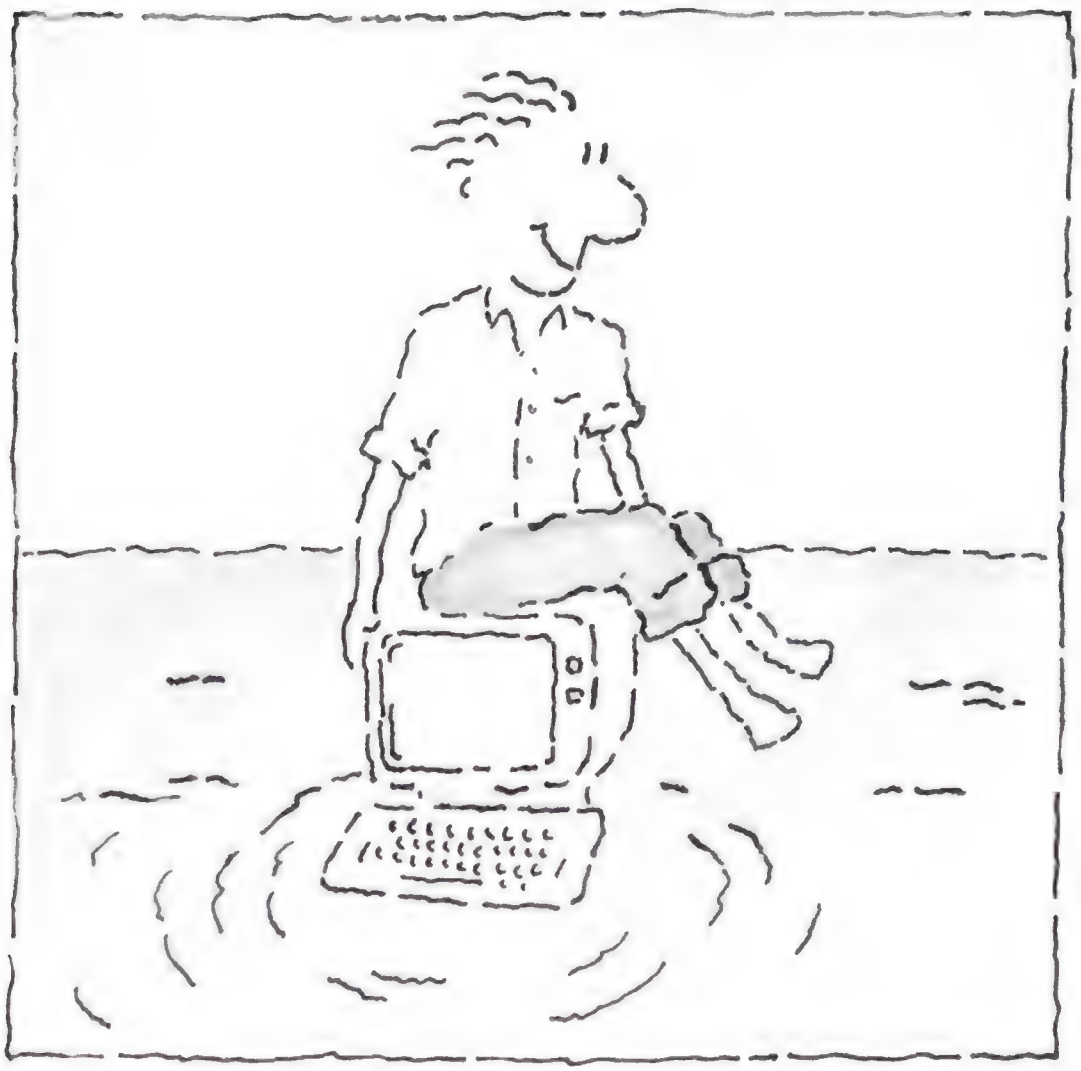

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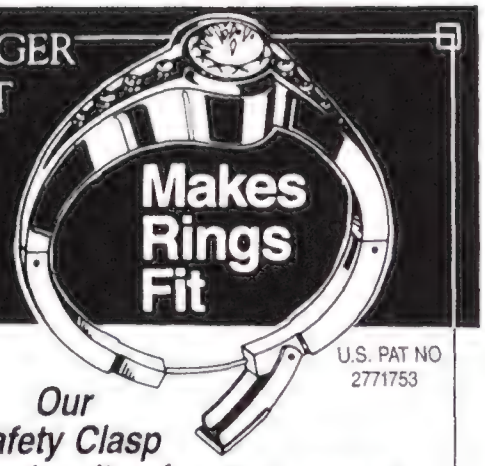
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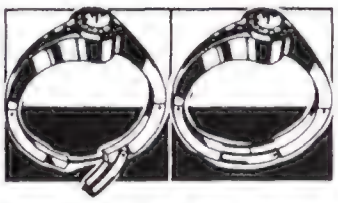
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Nattily dressed Liszt was painted when music master to Grand Duke of Weimar.

By 1849 Liszt and Carolyne were installed in connecting wings of the Villa Altenburg, an official residence in Weimar. The Czar had refused to grant her a divorce. For the next decade the pair presided over their own substantial sphere of musical and intellectual life. Liszt conducted concerts and operas, using his Weimar podium to champion the works especially of Berlioz and Wagner. In his own composing he turned for the first time to orchestral scores.

Carolyne took a hand, some would say a heavy hand, in much of this activity—Berlioz, particularly, acknowledged her encouragement—and was generally credited with helping to write the books that appeared under Liszt's name, notably studies of Chopin and of gypsy music (*"Le style, c'est la femme,"* a wit remarked).

Ten years of his public responsibilities at Weimar were enough for Liszt. He and Carolyne decided to move on to Rome and, further intercessions having apparently cleared the way with the Vatican, to get married there on Liszt's 50th birthday in 1861. Flowers were already hung in the church of San Carlo al Corso when, on the eve of the ceremony, the Pope withdrew his sanction.

After this blow, the two remained devoted but increasingly went their own ways. Carolyne settled in to a lonely existence in an apartment in Rome; Liszt began several years of intermittent withdrawal into religion, including the composition of several large-scale works on sacred themes. A contemporary diarist described him in this period as still a "striking, uncanny figure" but a bit of a noble ruin: "He is burnt out . . . only the outer walls remain, whence a little ghostlike flame hisses forth." In 1865 he took the minor orders of an abbé.

His friendship with Wagner came apart in a bizarre episode that resulted in his becoming his old colleague's father-in-law. Cosima, the only child of his and Marie's to survive, left her husband, the pianist, conductor and Liszt protégé Hans von Bülow, to live openly with Wagner. Even after matters were formal-

Tender portrait of Cosima Liszt, Richard Wagner—for whom she left von Bülow.

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ized by divorce and remarriage, Liszt refused to speak to Wagner. The breach was healed only when Wagner wrote him a generous and conciliatory letter entreating him to take part in the dedication of Wagner's theater at Bayreuth.

In 1869, having been invited to return to Weimar, Liszt shook off retirement and began what he called his "*vie trifurquée*," spending portions of each year in Rome, Budapest and Weimar. He maintained this strenuous pattern for the remaining 17 years of his life, until, in 1886, ill and tired after a grand sweep around Europe for celebrations in anticipation of his 75th birthday, he arrived at Bayreuth for a visit with Cosima, developed pneumonia and died. Carolyne died in Rome early the following year.

The most vivid, if overreverent, image we have of the aged Liszt is the one passed down by the awestruck students who gathered around him in the Weimar segment of his *vie trifurquée*. He had taught off and on throughout his career, of course, but it was during these last years that he came into his own as a guru. Young players flocked to him at Weimar, clamoring for an audition. Among them were the cream of the next generation's concert pianists. Among them, too, were untalented hangers-on mainly intent on exploiting the connection. So many pianists took lodgings that the town passed a law against practicing with open windows.

Those who came unequipped were sent away, sometimes harshly, sometimes with equally devastating politeness. After one young woman auditioned with an execrable version of a Chopin étude, Liszt placed his hand on her hair, kissed her forehead and said: "Marry soon, dear child. Adieu."

The lessons, for which he did not charge a pfennig, were group affairs. They took place three times a week from 4 to 6 P.M. in the drawing room of Liszt's residence. He would appear, shake hands, kiss cheeks, leaf through the music laid out on the piano by each student. When something caught his interest he would ask, "Who plays this?" Then the lucky—or unlucky—pianist approached the keyboard.

Liszt paced while the student played, usually keeping up a running commentary. He would be variously appreciative, sardonic (winking at the other students) or stern, a taskmaster demanding up to a dozen repetitions of a passage until a certain nuance was achieved. "A few times," wrote Amy Fay, "he pushed the student aside and played a few bars himself, and we saw the passion leap into his face like a glare of sheet lightning."

Liszt basked in the worship of his students during these years, but the melancholy truth was that, artistically, he had become an isolated figure. Decades of notoriety had produced the inevitable backlash of debunking and ridicule. His hopes gradually settled on what he called a musical afterlife. He wrote Carolyne that his ambition was to "hurl my lance as far as possible into the boundless realm of the future."

In this he succeeded to a degree. His music has been more influential than the public may realize. His symphonic poems left their mark on Richard Strauss. Pianistic scene painting like his evocation of the fountains at the Villa d'Este pointed the way toward the musical impressionism of Debussy and Ravel. His later, experimental scores anticipated many of the harmonic and melodic innovations—such as chromatic "tone rows" and the absence of a key signature—of Schoenberg, Bartók and other 20th-century modernists. John Ogdon, the English pianist who has made a specialty of late Liszt, argues that these pieces display "an avante-garde attitude to the problems of composing which was without parallel in the 19th century."

But such recognition lay far ahead. In the meantime Liszt had come to terms with the more personal, though extraordinary, impact he had had on his era—part poem, part joke, part myth. And with the acuity of the born showman, he gauged it for what it was, as when he was asked in his old age why he had never written his autobiography. "It is enough," he replied, "to have lived such a life as mine."

On maestro's 73rd birthday, bevy of pupils celebrated by garlanding his shoulders with roses, then posed for photograph recording the event.

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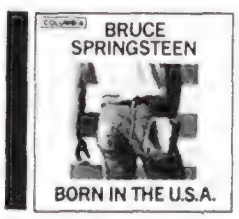

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# *Book reviews*

*The Hornes: An American Family*
Gail Lumet Buckley
Knopf, $18.95

In *The Hornes* Gail Lumet Buckley—daughter of famed singer Lena Horne and former wife of film director Sidney Lumet—uses her family as the lens through which to tell a larger tale: the little-known history of America's black bourgeoisie.

According to Buckley, the black bourgeoisie was born in the post-Civil War period and comprised three segments of black society—free Northern blacks, free Southern blacks and "favored" slaves. As the author explains, most of America, at least above the Mason-Dixon Line, had freed its slaves by 1800. Freed Southern slaves were much rarer individuals, usually natives of Charleston and New Orleans, the only Southern towns, she says, large enough to qualify as cities. Favored slaves included household servants, coachmen, cabinetmakers, illegitimate offspring by the owner's family—almost anyone who wasn't a lowly field hand.

Buckley believes that the black elite had a chance to thrive because, for a decade after the Civil War (known in black history as the "Mystic Years"), "the American Dream was color-blind." Until the Southern states began enacting "Jim Crow" legislation, blacks were accorded all the rights taken for granted by white Americans: they could vote, go to school, live and work where they wished, as well as marry whom they pleased.

Always a minuscule, inbred, mutually supportive world—Buckley describes it as "the small brown group within the large black mass"—the black bourgeoisie was a mirror image of the white middle class that surrounded it. Members were morally upright and believed unstintingly in the American dream, so much so that they founded their own Greek-letter societies and attended debutante balls. They did their best to ignore white racism, trying to convince themselves that it didn't exist, while dabbling in their own brand of prejudice directed against darker and poorer blacks.

The Hornes of Brooklyn were a fairly representative family. There may have been "better" cities to come from—Philadelphia, for one—but the Hornes had certain other advantages. They were comfortably off (not immensely wealthy, but property owners nonetheless), intellectually oriented (they had teaching degrees and appreciated the arts), politically motivated (they numbered in their ranks both suffragettes and civil-rights activists) and were "famously *good-looking*."

Though Buckley provides the necessary and often fascinating details about each generation of the Horne family from 1800 to the present (while, in turn, never losing sight of the national events that shaped black history), she may perhaps have to forgive readers for being most captivated by the story of her mother's life. Lena Horne had an unhappy childhood. Her parents' marriage ended in divorce—one of the early black divorces, Buckley notes—and Lena was raised largely by her paternal grandmother. Lena's father, Teddy, was the only Horne black sheep, a handsome man who loved money but hated work and managed, through his various "business dealings," to spend the Depression without any financial worries. Lena's mother, Edna, was a fickle woman, spoiled and somewhat unstable, who tried to establish a career on the stage but failed, and then pushed her daughter to become a star.

Buckley's book is filled with marvelous show-business anecdotes: much lore about New York's nightclub scene, which Lena Horne despised; Lena's feud with Ethel Waters on the set of *Cabin in the Sky*; and Lena's distaste for tap dancer Bill (Bojangles) Robinson, who costarred with her in the film *Stormy Weather*.

The author also chronicles her mother's extensive education in American and show-business racism: how, when touring with bands as a young singer, Lena Horne was denied access to certain hotels and had to sleep in the bus; how she lost certain coveted movie and stage roles because of her color; how, well into the 1950s, her scenes were being edited out of films when they were screened in the South.

Racism, Buckley concludes, was the only "bad fairy" at the black bourgeoisie's family party. Without it, she submits, her ancestors might have been business tycoons, might have held upper-echelon political positions and, perhaps most important of all, her mother might have been a "*real*" movie star. Frustration and anger do mark the pages of *The Hornes*, but the book, a serious contribution to the history of ethnicity in America, is also a celebration of a family that survived and triumphed.
*Robert Leiter*
Philadelphia editor and writer

*Cadillac Desert: The American West and Its Disappearing Water*
Marc Reisner
Viking, $22.95

When I was a student at the University of Arizona in the early '50s, I was intrigued by the way the campus lawns were kept green—they were periodically flooded with water. "Water is gold in the West," my father fumed when I told him. "The state would do better to hoard the water and let the lawns go back to sand."

Was he right? The ensuing decades seem to have proved him so and in this sometimes startling, always perceptive book, author Reisner (who was a staff writer for the Natural Resources Defense Council from 1972 until 1979 when he received the fellowship that enabled him to begin research on this book) takes a look at the complex interlapping of problems that beset the half of our nation that never got enough rain.

Despite the fact that we made an unbelievable deal on the West, buying it from Napoleon for only $15 million, it had its shortcomings. Beaver pelts it produced in abundance, as well as purple mountain majesties, but it was woefully short of fruited plain. It was basically a desert and early America was, after all, a land of farmers. Thus the ancient Biblical injunction to go forth and "teach the Word" became subverted in the West to "Go forth into the desert and make it bloom." Which is exactly what we did. And are still doing.

Early settlers believed they could fructify their dry prairies the way ancient civilizations had, by irrigating. But private efforts failed. Having to build as many as 40 windmills in order to irrigate 160 acres was a dismal prospect for a farmer with no money in a land with little wood. What happened next was inevitable. The government stepped in, specifically the Bureau of Reclamation and the Corps of Engineers, a pair of civilization-pushing agencies that Reisner calls, with much acerbity, "rivals in crime." Whatever the

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final assessment, they quickly came up with a cure for the West's perpetual water problem: they would build dams.

Thus began, says Reisner, a long binge of federal water entrapment and diversion unequaled in human history. Future civilizations may well refer to it as the Age of Dams. The hopelessly beige West turned gradually green. Jobs became plentiful and fortunes were made. Depression looming? Shortage of lettuce and tomatoes in the world, of wheat? Build another dam.

What was the price of creating this agricultural Eden beyond the wide Missouri? Depletion of water resources, first from the surface and then from underground.

The story of water projects is essentially the story of politics, and it is here that Reisner takes off the gloves. In Congress, water projects are a kind of currency, a wampum, a system of trading favors. "Ideology," says Reisner in one of his many fabulous one-liners, "is the first casualty of water development, perishing faster than truth." He insists there isn't a single Western politician who hasn't come before the funding boards crying that his state was about to run out of water.

Reisner saves some of his contempt for the big Arizona and California growers, claiming that after exhausting their current supplies of water they run to the politicians, whom they profess to despise, and beg for relief. At times, Reisner seems unfair to these politicians, who often are forced to be *for* water projects because to be *against* them implies a lack of vision, always political suicide.

Reisner's book is scholarly without being pedantic and he tells some fascinating stories, all in a style that pops and sparkles like a fresh mountain stream—how Los Angeles captured Owens Valley water, of the miraculous erection of Hoover Dam and the tragic collapse of the Teton, of the Great Dust Bowl where farmers actually vomited dirt and "two Kansas farms go by every minute." The chapter on Jimmy Carter and his celebrated opposition to Western water development, entitled "The Peanut Farmer and the Porkbarrel," is easily worth the price of the book.

Time has not been kind to the West's water projects. The vast West Texas and Ogallala aquifers are being recklessly drained, salt is poisoning California's long green valleys, our reservoirs are filling with silt. To make matters worse, there is a paucity of economical solutions; government has captured so much water in the West that no free market exists and no one knows what the price of water should be.

Reisner doesn't end his remarkable study with trumpet blasts of doom but he does ask a series of poignant questions: "So we want to know, even if it seems an academic matter now, what it all amounts to that we have done out here in the West? How much was sensible? How much was right? . . . What are we going to do next?"

I have a question of my own. Are they still flooding the campus lawns of Tucson?

*William Dieter*
Author of *The Cactus Garden*

*The Hogarth Letters*
Introduction by Hermione Lee
University of Georgia Press, $20

"You may write the letter to anyone, dead or alive, real or imaginary, on any subject," Leonard Woolf wrote to E. M. Forster, inviting the novelist to contribute to the newest booklet series of Hogarth Press, the publishing firm Woolf ran with his wife, Virginia, and the help of their new young assistant, who eventually became general manager, John Lehmann.

Although the invitation may not have been that wide open to all of the contributors, 12 booklets of *Hogarth Letters* on a wide variety of subjects were published between 1931 and 1933. They were gathered into a single volume, except for the contribution of Rebecca West, who greatly vexed Virginia Woolf by turning in her manuscript almost a year late. Now the collected letters, including that of the tardy West, have been reissued. A venture that once saw itself as directly involved in the immediate literary, philosophical, social and political scene is for us today an exercise in cultural archaeology.

In novelist Rosamond Lehmann's odd and oddly affecting "A Letter to a Sister," in which the amorphousness of the style reflects the essay's meaning, there is a striking passage which suggests the way in which moments of time are caught in aspic. Standing in her garden, she sees the button chrysanthemums as "unreal plants . . . parading a simple Victorian charm, a flavour as fascinatingly period as patchwork, or wax and shell decorations, or the early poems of the Sitwells." Looking back from 1955, her brother John, in *The Whispering Gallery*, used a different image to put *The Hogarth Letters* neatly in their place—and less maliciously than his sister did the Sitwells: "They preserve, like a row of jam jars on a larder shelf, the essence and flavour of the time."

The essence not only of the time but of the jam makers is the *The Hogarth Letters*, for most of the contributors, many of whom had Bloomsbury connections, reflect less the decade that had just begun, the 1930s, than the '20s and even more the prewar years in which so many of the writers were formed. Virginia Woolf's doubts about modern poetry were to be expected, despite her experiments with the novel, but it is a little suprising that Peter Quennell, who came to the genre's defense, should join her in dismissing or ignoring much of the best work.

There is sadness as well as fascination in many of the letters. The intelligence and rationality of Robert Cecil, good Edwardian virtues, had no effect at all on the participants in the 1931 armament conference, the collapse of which makes his urgent exclamation ("*It must succeed!*") the more painful to read today.

Sometimes, our 50-year perspective is less distressing. Hugh Walpole's amusing use of *Barchester Towers* as a yardstick to measure his parodic version of the modern novel is colored by the fact that since the 1930s, British fiction has been conservative compared to the work in the United States and France; Raymond Mortimer's condescending lecture on how to look at paintings takes on an extra edge now that the 19th-century English genre pictures which he could not see at all are being looked at seriously again.

Two essays stand apart from the other Hogarth letters, creations as vital in 1986 as they were when they first appeared. One is Rebecca West's account of the mystical experiences, each a product of its own age, that spot her family history, and of her own demonic vision at a Paris street fair in which she learns that order is not in the Universe but is Man's necessary imposition on perceived chaos. The other is E. M. Forster's letter to an 18th-century seaman who chose to stay behind in the Pelew Islands when the rest of his expedition returned to England with Prince Lee Boo, who would die without seeing his island home again. In a wonderfully ironic account of the enthusiasm with which Lee Boo took to English dress and customs, Forster contrasts the presumably civilized world with the natural one the sailor chose, and there is no doubt where his sympathy lies.

For the most part, *The Hogarth Letters* will appeal to the cultural historian in us, but the contributions of Rebecca West and E. M. Forster are much more than "unreal plants" or "jam jars."

*Gerald Weales*
Professor of English
University of Pennsylvania

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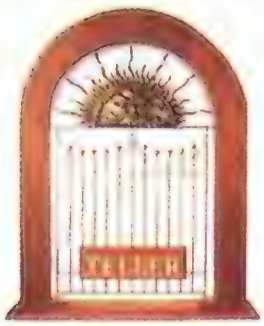

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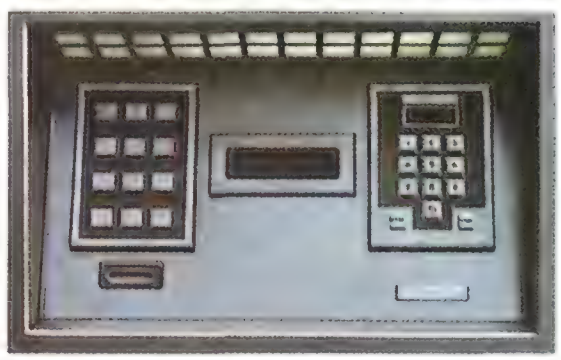

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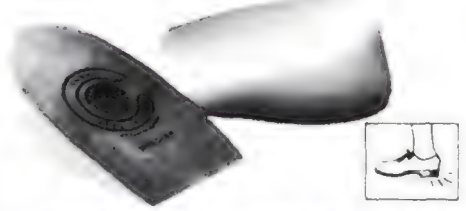

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# *Additional reading*


**Jade** (p. 28)

*Jade for You* by John Ng and Edmond Root, Jade N Gem Corporation of America (Los Angeles), 1984

*The Gem Kingdom* by Paul E. Desautels, Random House, 1971

*The Story of Jade* by Herbert P. Whitlock and Martin L. Ehrmann, Sheridan House (New York), 1949

*Jade* by Louis Zara, Walker and Company (New York), 1969

**Natural forest fires** (p. 42)

*Proceedings—Symposium and Workshop on Wilderness Fire*, edited by James E. Lotan et al., Intermountain Forest and Range Experiments Station (Ogden, Utah), 1985

"Wilderness Fires: Dangers and Survival" by Kathleen M. Davis and Robert W. Mutch, in *Management of Wilderness and Environmental Emergencies*, edited by Paul S. Auerbach et al., Macmillan, 1983

*Natural Fire: Its Ecology in Forests* by Laurence Pringle, Morrow, 1979

"Fire-Dependent Forests in the Northern Rocky Mountains" by James R. Habeck and Robert W. Mutch, *Quarternary Research*, October 1973

**Titanic** (p. 56)

*The Night Lives On* by Walter Lord, Morrow, August 20, 1986

"The *Titanic*: Lost & Found," *Oceanus*, Winter, 1985-86

*Beyond Reach: The Search for the Titanic* by William Hoffman and Jack Grimm, Beaufort Books (New York), 1982

*Raise the TITANIC!* by Clive Cussler, Viking, 1976

**Vienna art** (p. 70)

*Fin-de-Siècle Vienna: Politics and Culture* by Carl E. Schorske, Vintage Books, 1981

*Vienna 1900: Art, Architecture & Design* (exhibition catalog) by Kirk Varnedoe, Museum of Modern Art, 1986

*The Fall of the House of Habsburg* by Edward Crankshaw, Viking Press, 1963

*Vienna: Legend and Reality* by Ilsa Barea, Secker and Warburg (London), 1966

*Vienna* by Frederic V. Grunfeld, Newsweek Book Division, 1981

**Sturgeon** (p. 82)

"The Caviar Connection" by Peter Steinhart, *National Wildlife*, December-January, 1986

*Fishes of the Western North Atlantic* by Henry B. Bigelow et al., Sears Foundation for Marine Research, Memoir No. I, Part III, Yale University, 1963

*The Fresh & Salt Water Fishes of the World* by Edward C. Migdalski and George S. Fichter, Knopf, 1976

*Sturgeon Hooks of Eurasia* by Géza de Rohan-Csermak, Wenner-Gren Foundation for Anthropological Research (New York), 1962

**Orphan trains** (p. 94)

*The Best Method of Disposing of Our Pauper and Vagrant Children* by Charles Loring Brace, Wynkoop, Hallenbeck and Thomas (New York), 1859

"The Children's Migration" by Annette Riley Fry, *American Heritage*, December 1974

*Children West: A History of the Placing-Out System of the New York Children's Aid Society 1853-1890* by Miriam Z. Langsam, State Historical Society of Wisconsin (Madison), 1964

"The Orphan Trains" by Leslie Wheeler, *American History Illustrated*, 1983

**Sandcastles** (p. 104)

*Sandcastles: The Splendors of Enchantment* by Joseph Allen, Doubleday, 1981

*Sand Creatures and Castles: How to Build Them* by Bob and Pat Reed, Holt, Rinehart and Winston, 1976

*Castles in the Sand* by Michael Dipersio, Perigee Book, 1982

*Fantastic Architecture* by George R. Collins, Harry N. Abrams, 1980

*America's Forgotten Folk Arts* by Frederick and Mary Fried, Pantheon Books, 1978

**Franz Liszt** (p. 112)

*Franz Liszt: The Virtuoso Years* by Alan Walker, Knopf, 1983

*Liszt: The Artist as Romantic Hero* by Eleanor Perényi, Atlantic Monthly Press, 1974

*Franz Liszt: The Man & His Music*, edited by Alan Walker, Barrie & Jenkins (London), 1970

*Music-Study in Germany* by Amy Fay, Da Capo Press (New York), 1979

# *Smithsonian highlights*

### Planning a Smithsonian visit?

The Associates' Planning Packet, filled with helpful information, is yours for the asking; call or send postcard to Associates' Reception Center, Smithsonian Institution, Washington, D.C. 20560; (202) 357-2700 or TDD for hearing impaired (202) 357-1729. Begin your visit in the Castle: the Associates' Reception Desk is staffed 9 A.M. to 4 P.M. daily through Labor Day, and there is an "early bird" orientation to the 13 museums and the zoo. You will also receive a cordial welcome, full details about membership and printed materials in a handy Associates' bag.

### Special August exhibits and events

**Cooper-Hewitt Museum** (New York)
*Hollywood: Legend and Reality* (August 5-October 12).
*Newcomb Pottery: An Enterprise for Southern Women* (August 19-October 19).

**Hirshhorn Museum & Sculpture Garden**
*Selections from the Joseph H. Hirshhorn Bequest* (August 7-October 5).

**National Museum of American Art**
*Miniatures from the Collection* (opens August 8) New gallery surveys history of the American miniature portrait.

**Freer Gallery of Art**
*From Concept to Context: Approaches to Islamic and Asian Calligraphy* (July 29-November 16).

**National Portrait Gallery**
*Through Light and Shadow: Photographs by Clara Sipprell* (through November 30).

**National Air and Space Museum**
*Cross-Quarter Days* (August 2; 9:30 A.M.) Monthly sky lecture by Gail Cleere and Leroy Doggett of the U.S. Naval Observatory.

### Other August events

### Smithsonian on the air

*Radio Smithsonian*: features on this weekly half-hour series include a look at air-traffic control and art trends in the 1980s.
*Smithsonian Galaxy*: short radio features explore intriguing aspects of history, science, art and more.
*Here at the Smithsonian* . . .. three-minute TV features look at the role of black Americans in aviation and the Festival of American Folklife.

To find out what stations in your area carry these radio and TV programs, write: Office of Telecommunications, MAH Room BB40, Washington, D.C. 20560.

### Exhibition catalogs

Catalogs available at this time include:
*After the Revolution* (cloth; $24.95)
*Magnificent Voyagers, The U.S. Exploring Expedition 1838-1842* (cloth, $39.95; paper, $19.95)
*Robert Arneson* (paper, $16)
*John Frazee: Sculptor (1790-1852)* ($10)
*Patrick Ireland: Drawings (1965-1985)* ($6)
*The Art of Turned Wood Bowls: A Gallery of Contemporary Masters & More* (cloth, $29.95; paper, $16.95)
*Frank Lloyd Wright's Johnson Wax Buildings* (cloth, $35; paper, $19.95)
*Davy Crockett: Gentleman from the Cane* (paper, $4.50)

To order, send check or money order to Museum Shops, Box 44083, Washington, D.C. 20026-0083. Include 15 percent of total purchase to cover postage and handling (minimum, $1.75).

### Resident Associate events

To become a Resident Associate, or to find out about the many other activities presented monthly, or for fee and ticket information, call 357-3030. Here are some August events:
*My Memories of Old Beijing* (August 4; 8 P.M.) Film by Wu Yigong, director of the Shanghai Film Studio, that won Manila Film Festival award in 1983.
*The Amish: Not to be Modern* (August 12; 8 P.M.) Film provides rare glimpse of an Amish community in Ohio.
*The Austrian Dance Fiddlers* (August 15; 7:30 P.M.) An evening of traditional folk music, waltzes and marches.

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# LITTLE TRAMP

Red Grooms' whimsical paper sculpture of Charlie Chaplin shown on last month's cover is yours for the making. The cut-out poster—produced for the Smithsonian Institution Traveling Exhibition Service's *Hollywood: Legend and Reality*, generously supported by Time Inc.—can be assembled at home. All it requires is cutting, folding and pasting. Instructions are included (but are not simple). Or you can hang the poster as its own work of art (size: 39″ × 26¼″).

Please make checks payable to Smithsonian Institution for $16 (includes shipping and handling):

Chaplin/Grooms Poster
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Washington, DC 20013

Poster published by Red Grooms and Shark's Inc. Dealer inquiries: Shark's Inc., 2020 Ninth Street, Boulder, CO 80302.


*Headhunters and Hummingbirds* (August 19; 8 P.M.) Lecture about an expedition to the Ecuadorian jungle by team chronicler and photographer Robert M. Peck.
*Bourbon Street Beat* (August 20; 7 P.M.) The Pontchartrain Causeway New Orleans Jazz Band in a courtyard setting.
*Edwin Turner Lecture* (September 4; 8 P.M.) Princeton astrophysicist charts the frontiers of astronomy.

### Smithsonian Institution Traveling Exhibition Service

SITES circulates exhibitions to hundreds of cities outside Washington. To sponsor a show in your community, write SITES, Smithsonian Institution, Washington, D.C. 20560. Here are some August exhibits:
Clearwater, Florida (August 2-31) *The Dog Observed: 1844-1983*, Ruth Eckard Hall.
Fort Wayne, Indiana (August 2-September 7) *Early Flight: 1900-1911*, Old City Hall Historical Museum.
Honolulu (August 16-September 14) *Images of Old Age in America*, Hawaii Committee for the Humanities.
Montgomery, Alabama (August 9-September 7) *After the Revolution; Everyday Life in America, 1780-1800*, Landmarks Foundation of Montgomery.
Philadelphia (August 16-September 14) *The Magic of Neon*, Franklin Institute Science Museum.
Sherman, Texas (August 30-September 28) *Family Folklore*, Sherman Historical Museum.

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*Highlights continued*

# Sailors' art at Cooper-Hewitt

*For nearly half a century, British crewmen embroidered portraits of their ships during the slow times at sea*

Life aboard the great ships of the 19th century was filled with extremes. There were hard times—day upon day of raging storms, followed by repairs of torn sails and other casualties. And there were excruciatingly slow times—days of no wind, of sitting and waiting in the stillness.

It must have been on just such a slow day, sometime around 1840, that a British sailor decided he'd had it with mending sails, and instead he picked up some colored thread and began to embroider a portrait of his ship. We can't be sure who did the first one, but we know that for 40 years, wherever Britannia ruled the waves (and that was almost everywhere), someone could be found belowdecks bent over a work-in-progress.

In some ports, artisans also turned out similar ship portraits; but because such works were almost always unsigned, much about their background remains a mystery. Still, many ships can be identified, and historical-ship buffs will note pertinent details: for example, a long streamer trailing behind a ship indicates that it is bound for home. The 50 pieces in "Embroidered Ship Portraits" will be on view at the Cooper-Hewitt through September 7.
*Constance Bond*

Embroidered merchant bark *Glaslyn* is encircled by flags, topped by British Crown.

Like most ship portraits, this frigate was worked with colored wools on plain, woven cotton.

Rare stern view portrays a three-decker warship with an accompanying frigate.

British, American and Peruvian warships are shown in a Peruvian harbor, probably Callao.

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**Grand Canyon Adventure** September 12-22: Raft with expert boatmen through magnificent scenery on the Colorado River.

**Alaska** September 20-30: Cruise Inside Passage on board a small ship that permits close viewing of wildlife.

**Treasure Houses of Early America** September 20-27: From Wilmington, Delaware, join exclusive tour of Winterthur, Longwood Gardens and the Brandywine Valley.

**Okefenokee Swamp** October 11-18: Canoe and camp in this wilderness sanctuary for millions of singing creatures.

**Essence of Philadelphia** October 15-19: Discover the people, neighborhoods and cultural institutions that shape the city.

**Chesapeake Bay and the Colonial South** October 27-November 5: Sail on the elegant *Illiria* from Philadelphia to Nassau including stops at Savannah and Charleston.

**Cajun Country** November 3-10: Experience Louisiana, from New Orleans jazz, Creole cooking to mysteries of the bayou.

**Christmas at the Smithsonian** December 5-7: Welcome the holidays with tours, music and festive dining at selected museums.

**Everglades** December 6-13: For the novice or expert, canoe and camp among Florida's Ten Thousand Islands.

**Christmas in Santa Fe** December 21-28: Santa Fe combines Indian, Hispanic and American traditions for a memorable holiday experience.

**Virgin Islands** February 1-8: Relax aboard your private yacht, *Nantucket Clipper,* while exploring these delightful islands.

**Florida Springs** February 6-10: Here's a new offering for canoeists to enjoy the freshwater springs of Central Florida and see the endangered West Indian manatee.

**Hawaii** February 7-19, February 21-March 5: Experience the wondrous islands of Hawaii, Maui, Kauai and Oahu.

**Baja Whale Watch** February 23-March 3 or March 3-11: Explore the remote beauty of Baja California in the company of gentle gray whales.

**Coming in April** Natural history tours to Arizona and Texas' Big Bend.

## Foreign Study Tours

**People's Republic of China** Ten unique itineraries: Hike, travel by train, study decorative arts, visit Nepal and Tibet . . . tours for first-time and repeat China travelers.

**Countryside Programs** In August and September explore one of three scenic and historic areas in Italy, Austria or Switzerland.

**Irish Walk** September 5-17: Take day hikes through a variety of settings in the Ring of Kerry and Connemara.

**Crown Jewels of the Hapsburg Empire** September 6-21: Explore museums, cultural life in Prague and Vienna with emphasis on Central European art, history.

**Oxford Smithsonian Seminar** September 12-27: Be an Oxford Scholar. Attend classes and field trips.

**Yugoslavia** September 18-28: Discover Oriental cities with mosques, medieval towns with castles set against Alps.

**Scandinavian Design—Past and Present** September 21-October 5: Enjoy a wealth of artistic expression; see museums, galleries, design ateliers, artists' studios.

**Black Forest Walking Tour** September 27-October 10: St. Moritz and the Black Forest provide spectacular sights for hikers.

**In Pursuit of Brazil** September 30-October 17: An enormous land of contrasts and exuberance to fascinate you.

**Canals and Countryside** October 1-12: Cruise through picturesque English and Welsh countryside on famous canals.

**Voyage to Mythical Lands** October 1-15: Sail the *Sea Cloud* to Aegean islands rich with legends of ancient cultures. Discover Constantinople's Byzantine grandeur.

**Bermuda** October 16-23: Reside at Biological Research Station while exploring the island's diverse habitats.

**India—Arts & Crafts** October 17-November 8: Study the rich decorative elements of this exotic land. Visits include Madras, Agra, Kashmir and Bombay.

**Paris and the Provinces** October 18-November 1: Travel in Côte d'Azur, Brittany or Provence, then spend six days in Paris.

**Atlantic Crossing** November 29-December 14: A sailing adventure with lectures—from the Canary Islands to Martinique on the four-masted *Sea Cloud.*

**Christmas in Europe** Celebrate with fellow Associates in one of four idyllic settings: Munich and Rothenburg; Winchester; Salzburg and Vienna; or Canterbury.

**Backstage London** January 2-11: In Europe's theater capital, attend traditional and avant-garde productions, meet company members backstage.

**Tanzania-Kenya Wildlife Safari** January 23-February 11: A unique wildlife excursion featuring the best of East Africa.

**Write National Associates, Capital Gallery 455, Smithsonian Institution, Washington, DC 20560 or call (202) 287-3362 for tour brochures**

# in Washington

## Smithsonian Seminars

Expand your educational horizons this fall as you combine a pleasure-filled visit to the nation's capital with stimulating week-long courses of study that highlight Smithsonian museums and research facilities. These purposeful vacation seminars give you the opportunity to share special interests with fellow Associates.

From September 21 through 26, Smithsonian scholars will lead exciting new seminars. In addition to lectures and related field trips, you will enjoy a welcoming buffet, farewell dinner and time to see Washington, D.C. Hotel is optional.

### Biodiversity

Join Smithsonian scientists and nationally known scholars E.O. Wilson, Stephen Jay Gould and Paul Ehrlich for a wide-ranging series of activities, as you learn about the impact of shrinking natural habitats on plant and animal life, during the National Forum on Biodiversity, cosponsored with the National Academy of Sciences.

### Native American Cultures

Explore the Smithsonian's collections of native American basketry, pottery and archival resources as you study the history of American Indian tribal life and visit a Paleo-Indian excavation site in the Shenandoah Valley.

### Music at the Smithsonian

Enjoy the vast range of musical activities at the Smithsonian, learn about the European and African roots of American music and trace the evolution of theatrical music, spirituals, gospel, blues, ragtime and jazz during an exciting series of performances, lectures and behind-the-scenes tours of the Institution's collection of musical instruments.

### Aircraft Restoration

Share in the excitement of restoring vintage planes as you attend workshops and demonstrations on woodworking, metalwork and assembly by craftsmen at the Air and Space Museum's Paul E. Garber Facility.

### Civil War America: A Visual Record

Relive the Civil War era through the Smithsonian's collections of classic portraits and memorabilia and with visits to landmark buildings, monuments and historic battlefields near Washington, D.C.

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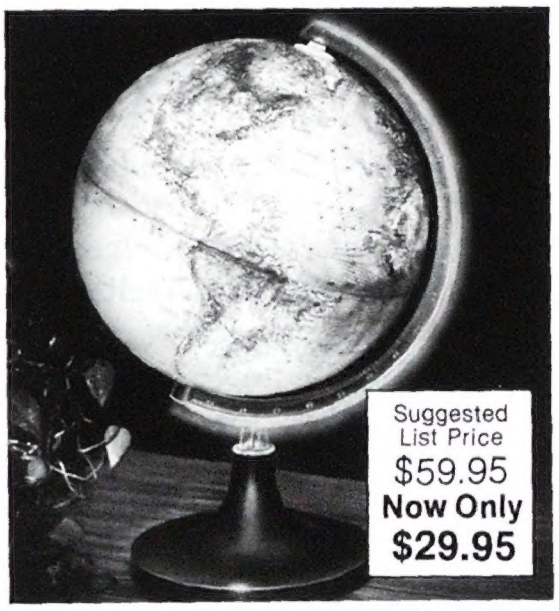


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*By David Snell*

# *Behold the bark and the bite of the tickle-tongue tree*

Dear Bill:

Behold, betaste, becontemplate the magical bark of the tickle-tongue tree.

I knew about the tickle-tongue tree, as folks call it, when I was growing up in the little town of Minden, in northwest Louisiana. It was something of a rarity in those piney red clay hills, but now and then, when I came across one in somebody's pasture or old farmed-out cotton field, if I happened to have a pocketknife handy, and if I was brave enough to risk impaling myself on its formidable armada of thorns, I could harvest enough of the bark to fill a shirt pocket and maybe even share some with another kid. The more rustic of our local old-timers, the ones who might have regarded the actor Walter Brennan as their role model, would tell us kids, with profound conviction, that the dried bark of the tickle-tongue tree was good for the toothache, and that this had to be so because that's how come the Indians regarded it as powerful good medicine.

Neither the old-timers nor we kids knew the tickle-tongue by its proper name, the prickly ash, nor by any of its many aliases mentioned by the late Texas naturalist Robert A. Vines (see enclosed Zeerocksed pages from his monumental book, *Trees, Shrubs, and Woody Vines of the Southwest*). Nor did we have any idea that the prickly ash came in so many species—more than 150 worldwide.

Now it turns out, as I have discovered since moving to Houston, that the coastal-plains region of south Texas is the Tickle-Tongue Capital of the World. Out there on the rangelands to the west of this metropolis, rare is the barbed-wire fence that does not have tickle-tongue trees growing up through the strands. The trees are there, folks say, because birds feast on the berries in the summer and fall, and then plant the indigestible seeds contained in the berries while they perch on the barbed wire (the "bob warr," as Texans call it).

One of the aliases mentioned by Mr. Vines is "Wait-a-bit." In the old days of open rangeland, before there was such a thang as bob warr, the tickle-tongue trees (which more properly, perhaps, should be called bushes) just sort of grew here and there, more or less willy-nilly. For a cowpoke riding herd, one of the considerable inconveniences of the workday was getting his britches or chaps all snagged up on those sneaky cat-claw-like thorns. When this happened, so goes the legend, he'd holler "Wait a bit!" or "Hold it up a minute!" to his fellow cowpokes, so's he could extricate himself. Well, you know how legends are. More likely, I reckon, the Wait-a-bit tree would have become known as the Dammit-to-hell tree.

As for that other legend, concerning the therapeutic value of the tickle-tongue tree to sufferers of toothache, I have my doubts about that too. Do you remember the comedian Fred Allen's old-time radio sales pitch for a mythical brand of soap? The manufacturers claimed no special beautifying or cleansing effect. "It is intended," said Allen, "solely to keep you company in the bathtub."

So I'd venture to say that simple companionship is the main worth of a sliver of tickle-tongue bark. In other words—and maybe this shouldn't be bandied about in the wrong circles—you could call it recreational.

If you want a precise prescription from kindly old Dr. Walter Brennan, it is this: break off a small piece of the sliver of bark, say, about one-quarter inch or one-half inch in length; place it on the tip of the tongue or just inside the lower lip or in the pouch of a cheek; hold it there for a few minutes and you will begin to feel—locally—the tingly recreational effect. And when the piece of bark begins to lose its tingle, replace it with another, on and on. . . .

In the Minden Grammar School, where the teachers could detect the chewing of gum at 60 paces, every kid knew that a tiny wisp of tickle-tongue bark was easier to get away with than Mr. Wrigley's product. And not only cheaper but also more fun.

Now, good Bill, you know more about the tickle-tongue tree than you ever wanted to.

Best—
Dave

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two centuries old and only
six inches long, suggests why
jade is still sought today (p. 28)